

Pantheon Report

Generated at 2017-09-22 11:20:49 (UTC).

Data path: Colombia ppp0 (*remote*) → AWS Brazil 2 Ethernet (*local*).

Repeated the test of 14 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

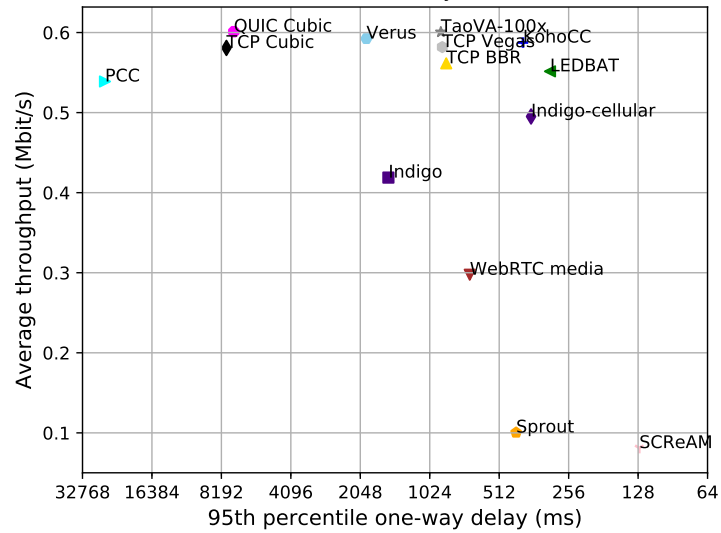
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against **gps.ntp.br** and have been applied to correct the timestamps in logs.

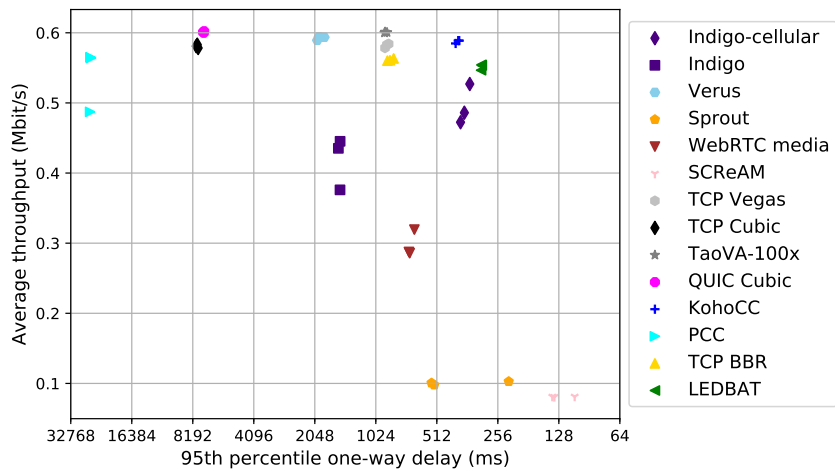
Git summary:

```
branch: indigos @ 46c7c812d4acb71eea4f5fb0b03b3657cea3062f
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c
third_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5
third_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fab936fdca204b80db
third_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaaeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.56	868.62	2.44
TCP Cubic	3	0.58	7790.03	30.94
LEDBAT	3	0.55	308.42	1.32
PCC	3	0.54	26176.29	98.67
QUIC Cubic	3	0.60	7239.38	29.26
SCReAM	3	0.08	126.49	0.66
WebRTC media	3	0.30	686.92	1.36
Sprout	3	0.10	432.44	1.03
TaoVA-100x	3	0.60	916.76	2.73
TCP Vegas	3	0.58	903.49	1.01
Verus	3	0.59	1927.37	4.54
Indigo	3	0.42	1547.09	17.81
Indigo-cellular	3	0.50	372.55	1.14
KohoCC	3	0.59	403.99	1.39

Run 1: Statistics of TCP BBR

Start at: 2017-09-22 09:53:55

End at: 2017-09-22 09:54:25

Local clock offset: 0.1 ms

Remote clock offset: -8.016 ms

Below is generated by plot.py at 2017-09-22 11:20:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 871.715 ms

Loss rate: 2.33%

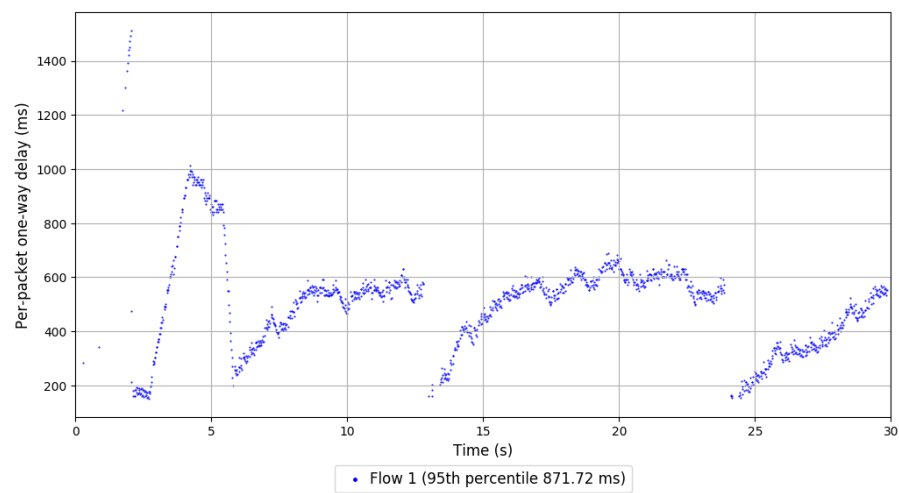
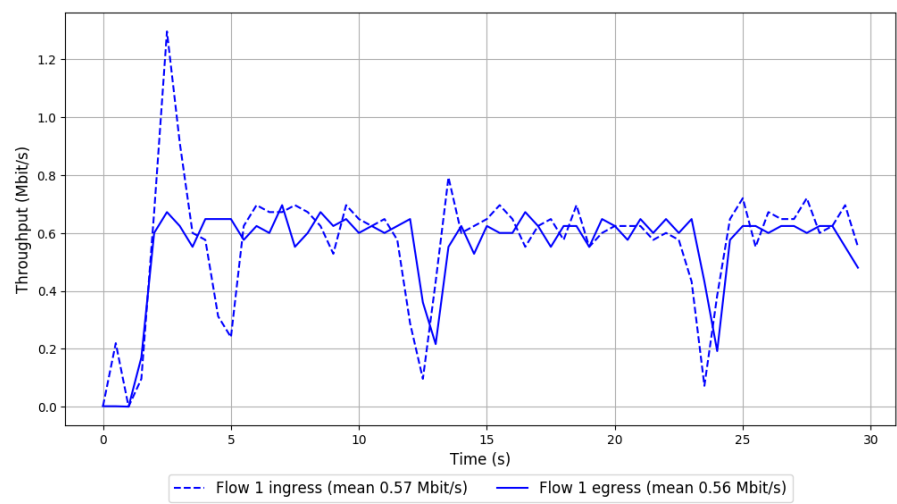
-- Flow 1:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 871.715 ms

Loss rate: 2.33%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2017-09-22 10:10:18

End at: 2017-09-22 10:10:48

Local clock offset: 0.057 ms

Remote clock offset: -2.735 ms

Below is generated by plot.py at 2017-09-22 11:20:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 897.561 ms

Loss rate: 2.54%

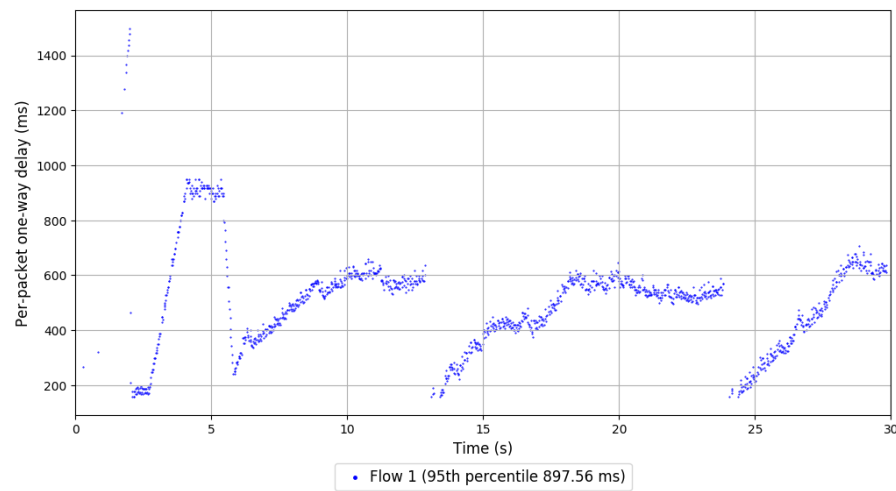
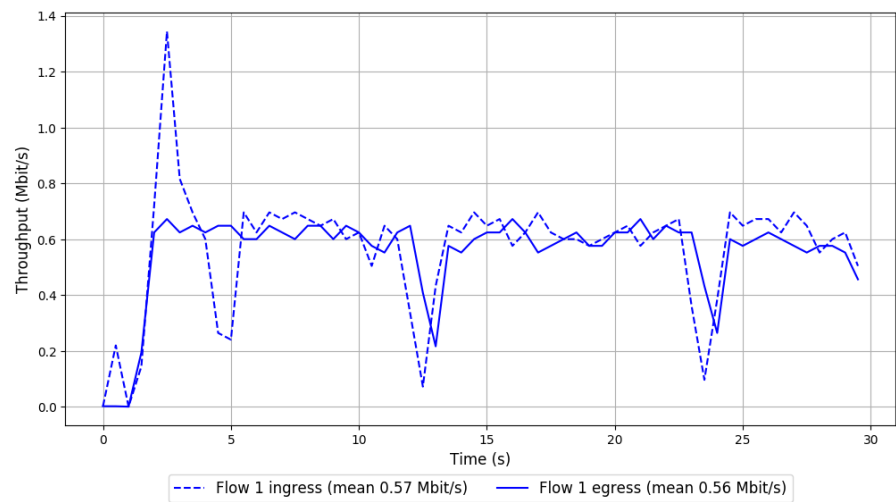
-- Flow 1:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 897.561 ms

Loss rate: 2.54%

Run 2: Report of TCP BBR — Data Link

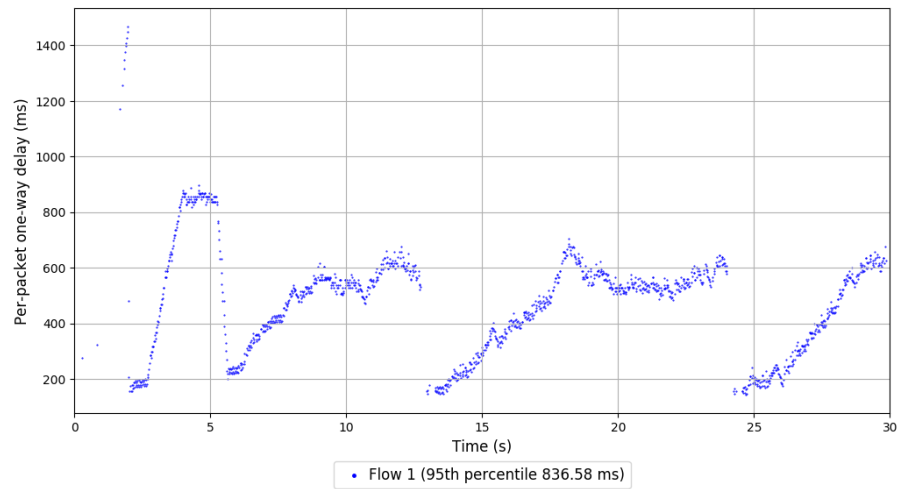
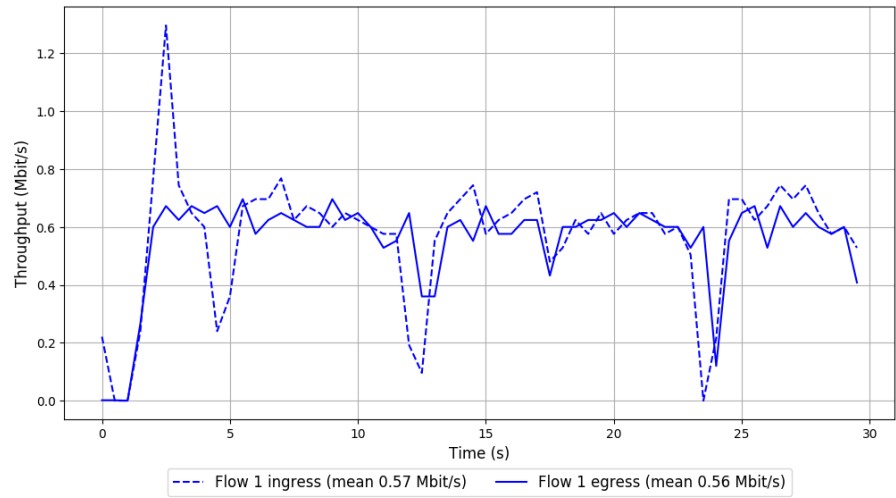


Run 3: Statistics of TCP BBR

Start at: 2017-09-22 10:26:41
End at: 2017-09-22 10:27:11
Local clock offset: -0.016 ms
Remote clock offset: -2.821 ms

Below is generated by plot.py at 2017-09-22 11:20:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 836.583 ms
Loss rate: 2.46%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 836.583 ms
Loss rate: 2.46%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2017-09-22 09:43:22

End at: 2017-09-22 09:43:52

Local clock offset: 0.152 ms

Remote clock offset: -8.056 ms

Below is generated by plot.py at 2017-09-22 11:20:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 7784.729 ms

Loss rate: 31.06%

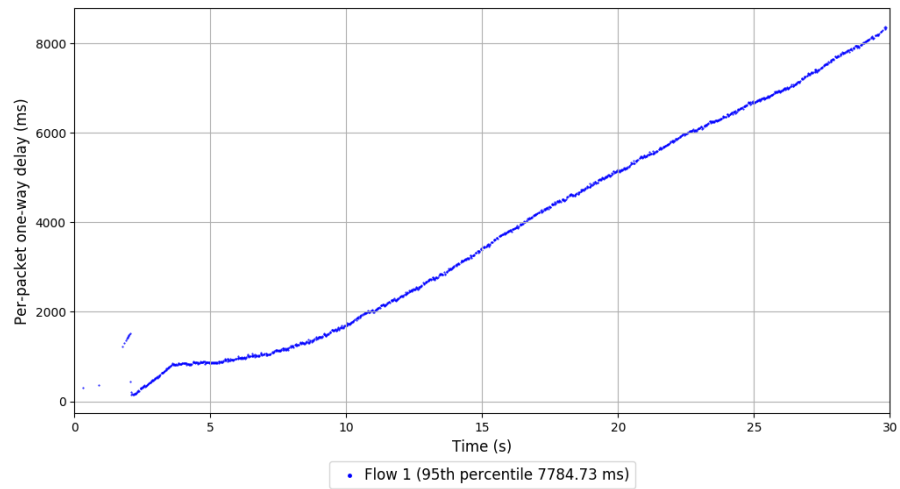
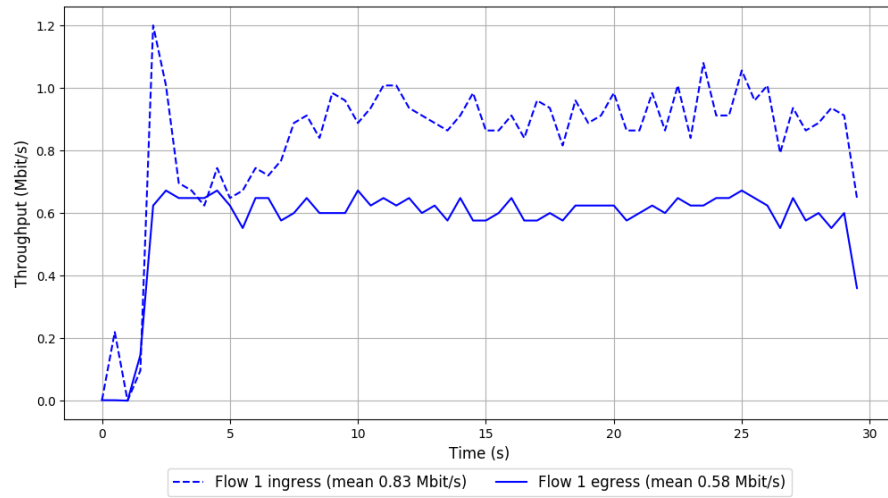
-- Flow 1:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 7784.729 ms

Loss rate: 31.06%

Run 1: Report of TCP Cubic — Data Link

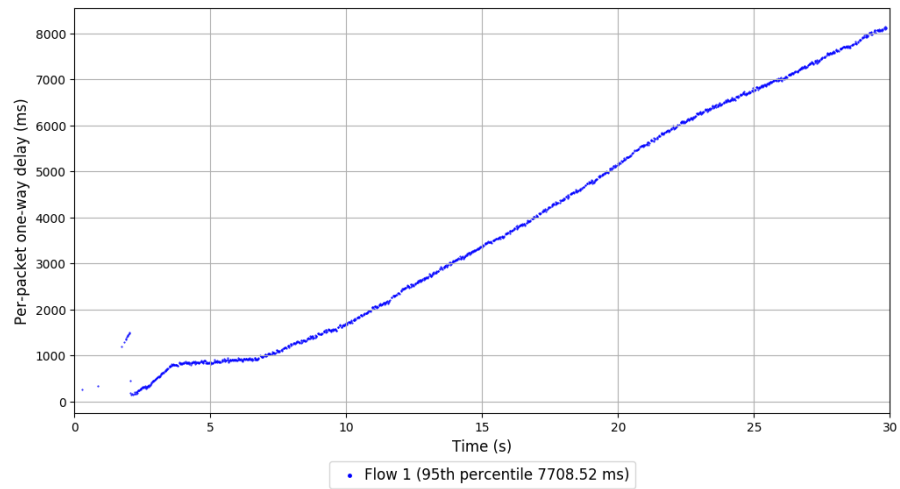
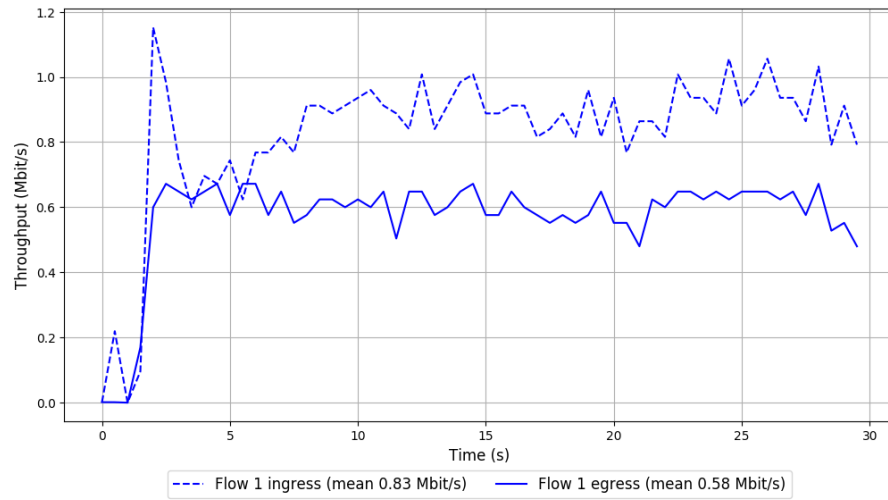


Run 2: Statistics of TCP Cubic

Start at: 2017-09-22 09:59:45
End at: 2017-09-22 10:00:15
Local clock offset: 0.032 ms
Remote clock offset: -3.093 ms

Below is generated by plot.py at 2017-09-22 11:20:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7708.516 ms
Loss rate: 30.94%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7708.516 ms
Loss rate: 30.94%

Run 2: Report of TCP Cubic — Data Link

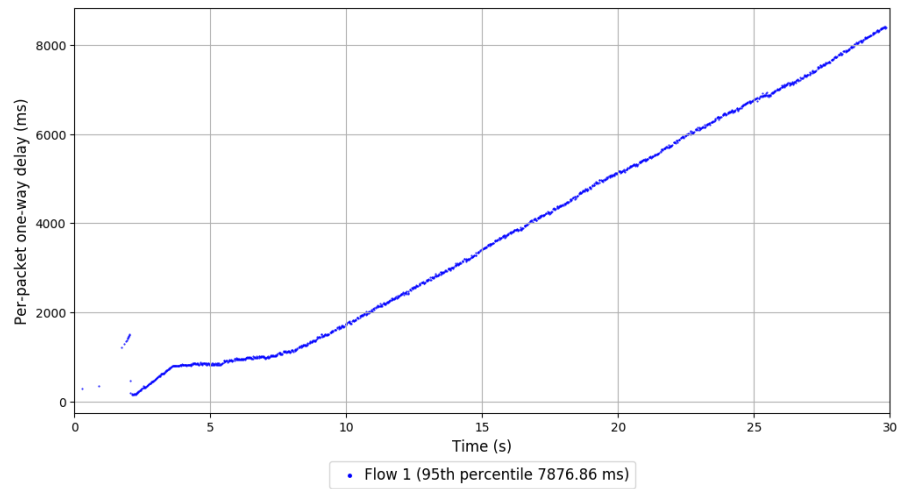
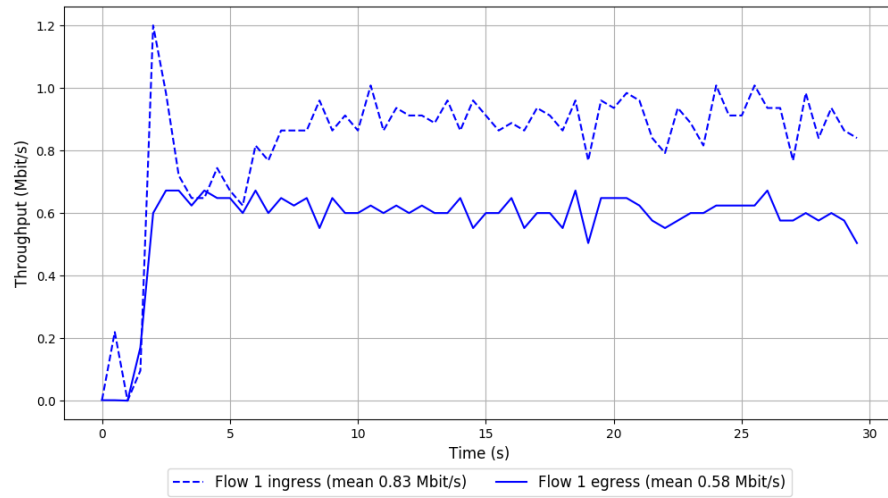


Run 3: Statistics of TCP Cubic

Start at: 2017-09-22 10:16:08
End at: 2017-09-22 10:16:38
Local clock offset: 0.096 ms
Remote clock offset: -7.736 ms

Below is generated by plot.py at 2017-09-22 11:20:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7876.858 ms
Loss rate: 30.83%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7876.858 ms
Loss rate: 30.83%

Run 3: Report of TCP Cubic — Data Link

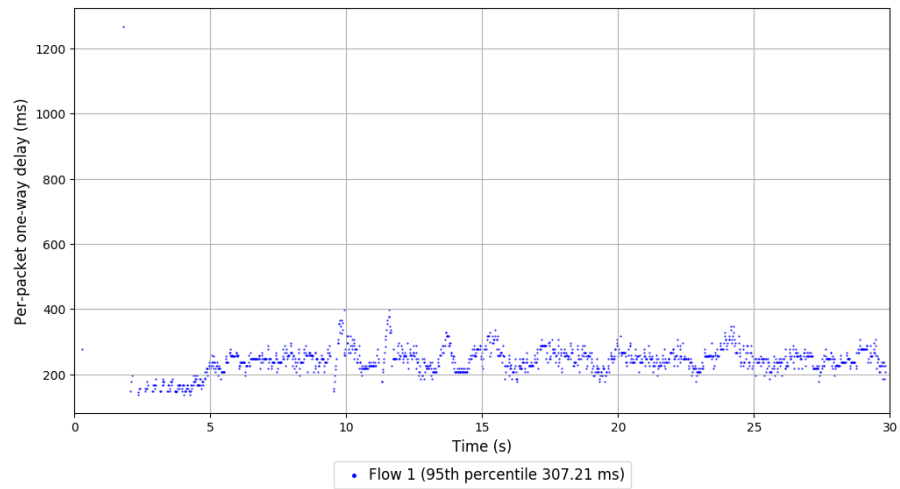
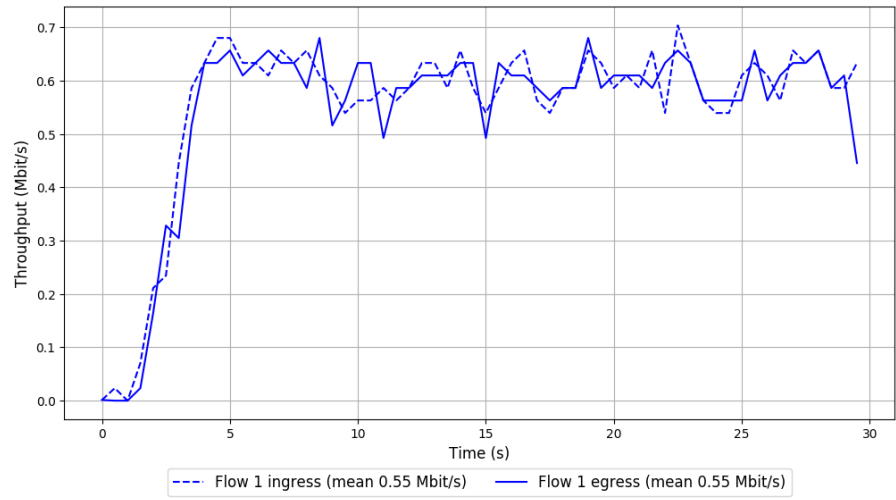


```
Run 1: Statistics of LEDBAT

Start at: 2017-09-22 09:50:24
End at: 2017-09-22 09:50:54
Local clock offset: 0.106 ms
Remote clock offset: -3.039 ms

# Below is generated by plot.py at 2017-09-22 11:20:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 307.210 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 307.210 ms
Loss rate: 1.41%
```


Run 1: Report of LEDBAT — Data Link

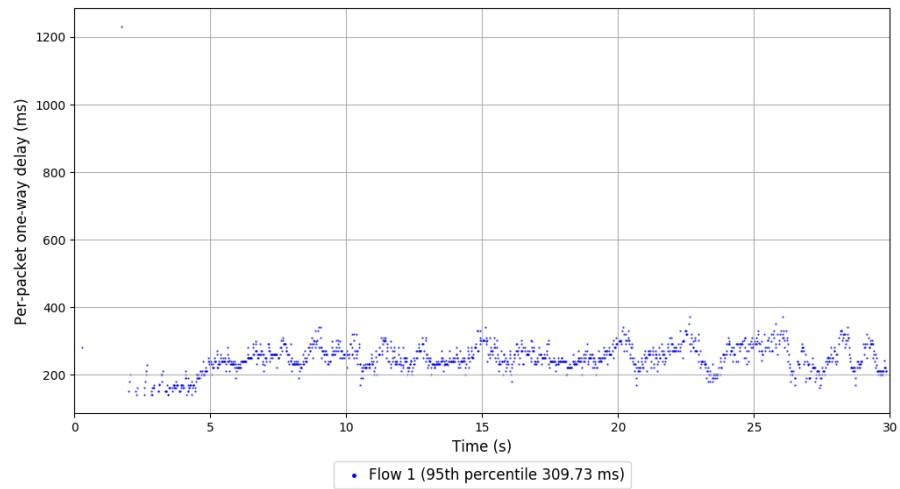
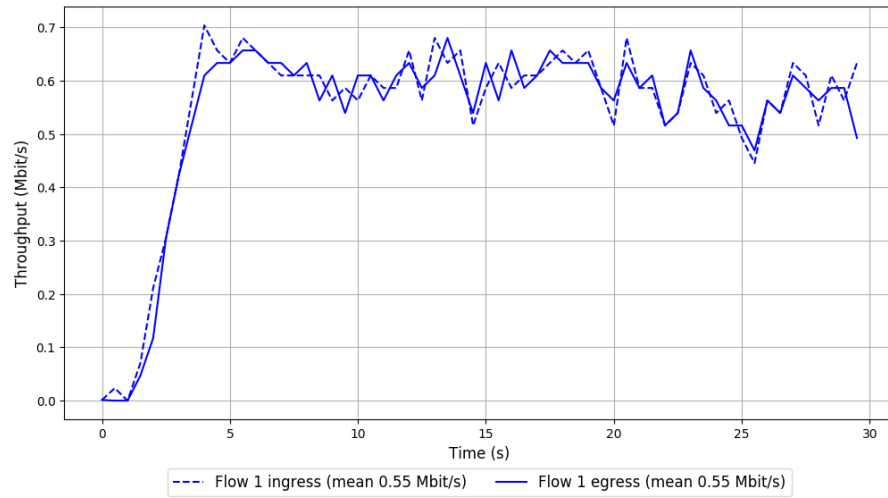


Run 2: Statistics of LEDBAT

Start at: 2017-09-22 10:06:47
End at: 2017-09-22 10:07:17
Local clock offset: 0.096 ms
Remote clock offset: -2.861 ms

Below is generated by plot.py at 2017-09-22 11:20:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 309.727 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 309.727 ms
Loss rate: 1.29%

Run 2: Report of LEDBAT — Data Link

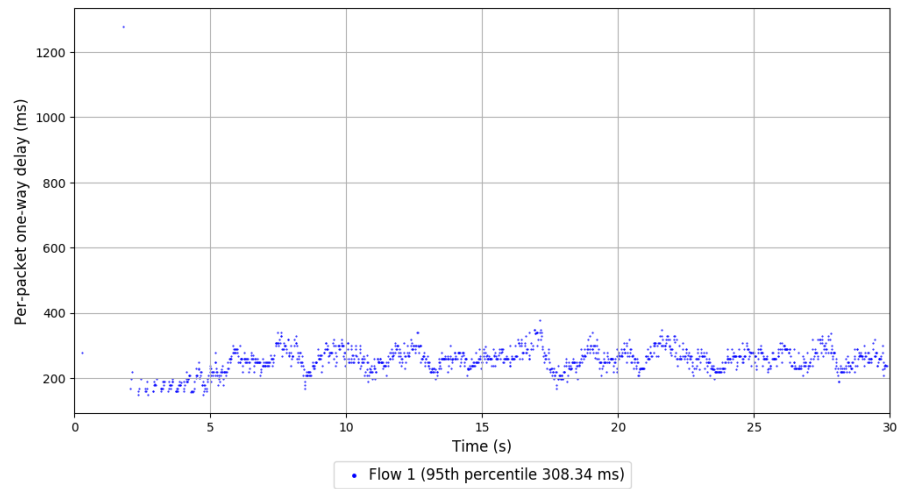
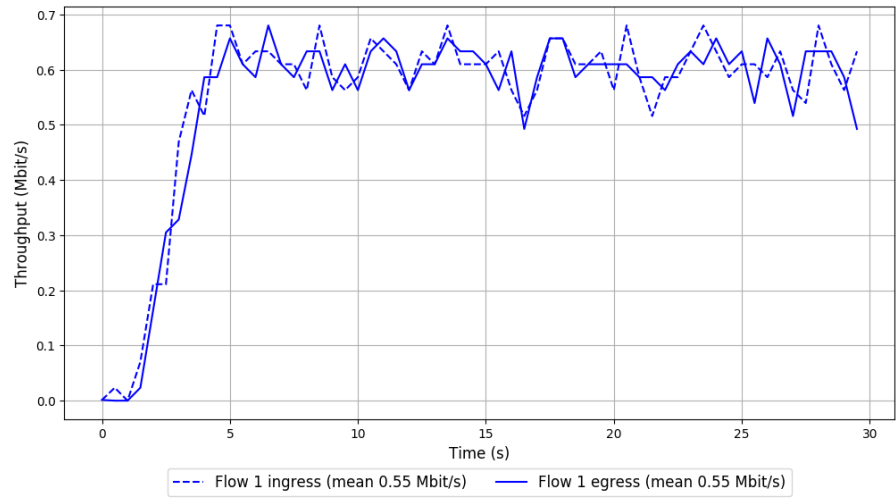


Run 3: Statistics of LEDBAT

Start at: 2017-09-22 10:23:10
End at: 2017-09-22 10:23:40
Local clock offset: -0.035 ms
Remote clock offset: -7.914 ms

Below is generated by plot.py at 2017-09-22 11:20:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 308.336 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 308.336 ms
Loss rate: 1.27%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC

Start at: 2017-09-22 09:46:52

End at: 2017-09-22 09:47:22

Local clock offset: 0.125 ms

Remote clock offset: -8.07 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 26196.456 ms

Loss rate: 98.60%

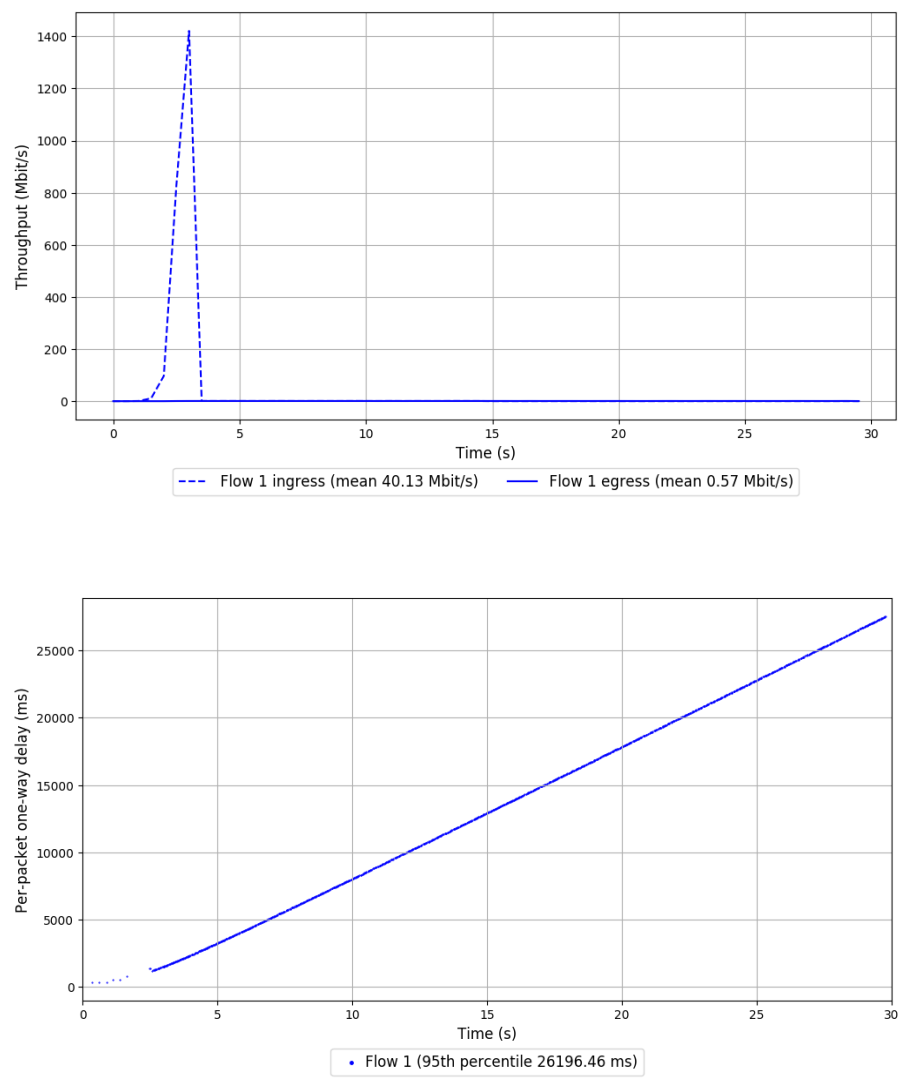
-- Flow 1:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 26196.456 ms

Loss rate: 98.60%

Run 1: Report of PCC — Data Link

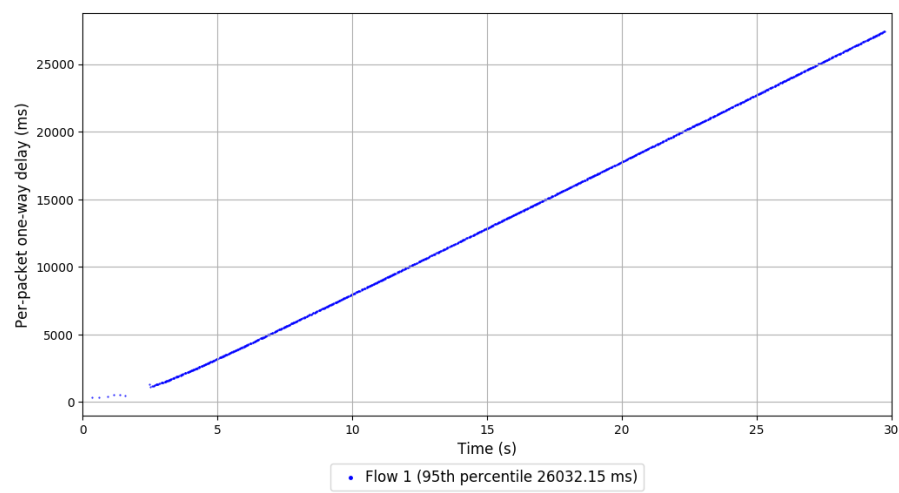
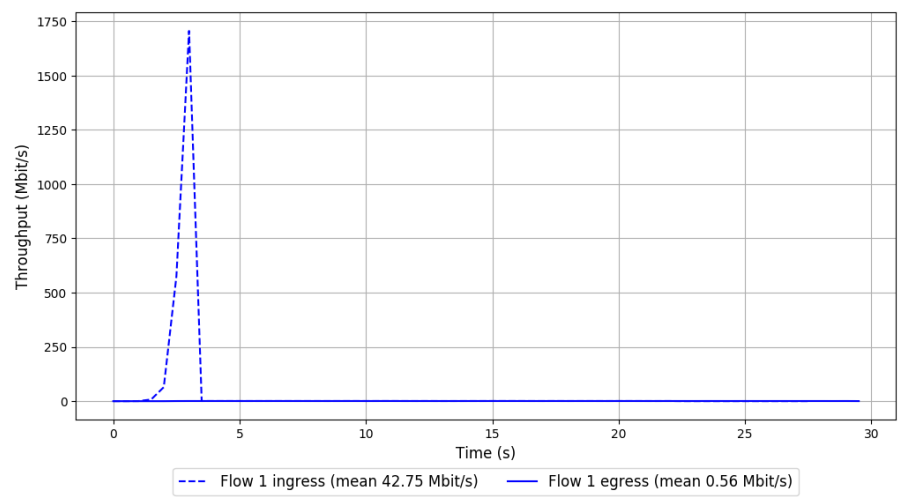


Run 2: Statistics of PCC

Start at: 2017-09-22 10:03:16
End at: 2017-09-22 10:03:46
Local clock offset: 0.084 ms
Remote clock offset: -2.941 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26032.147 ms
Loss rate: 98.61%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26032.147 ms
Loss rate: 98.61%

Run 2: Report of PCC — Data Link

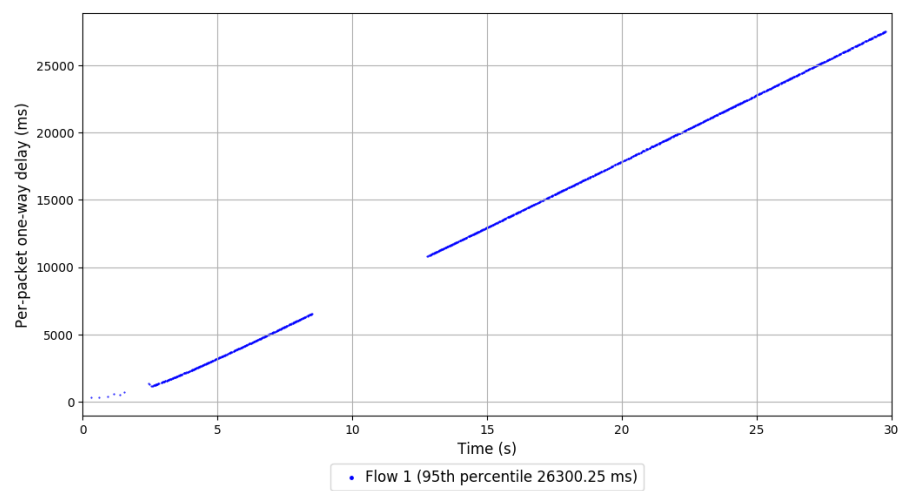
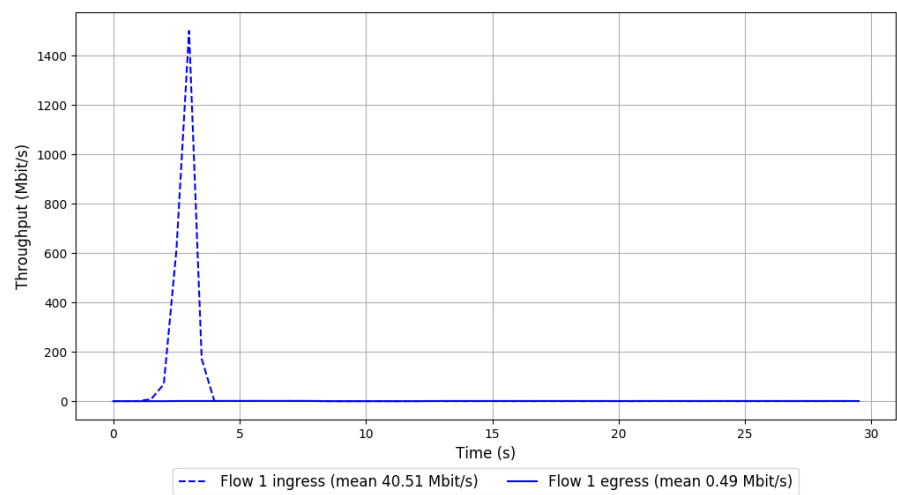


Run 3: Statistics of PCC

Start at: 2017-09-22 10:19:38
End at: 2017-09-22 10:20:09
Local clock offset: 0.089 ms
Remote clock offset: -7.883 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 26300.252 ms
Loss rate: 98.79%
-- Flow 1:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 26300.252 ms
Loss rate: 98.79%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2017-09-22 09:45:42

End at: 2017-09-22 09:46:12

Local clock offset: 0.092 ms

Remote clock offset: -3.063 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7228.854 ms

Loss rate: 29.29%

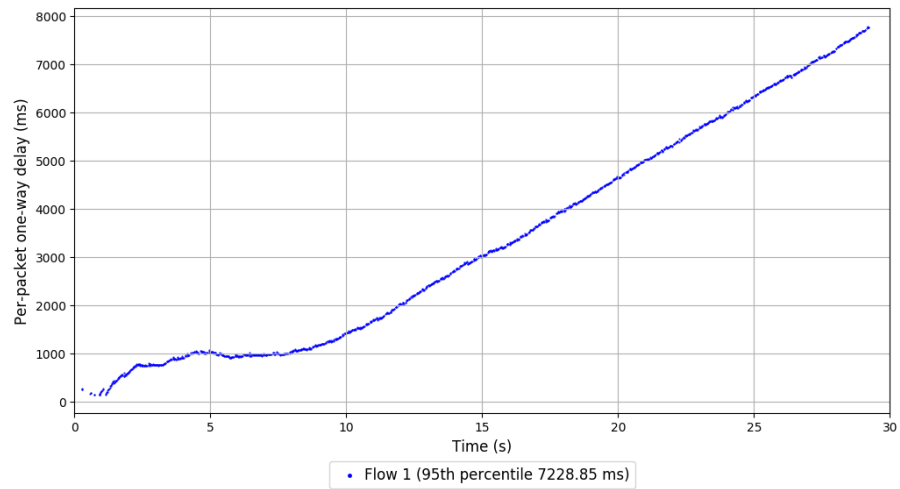
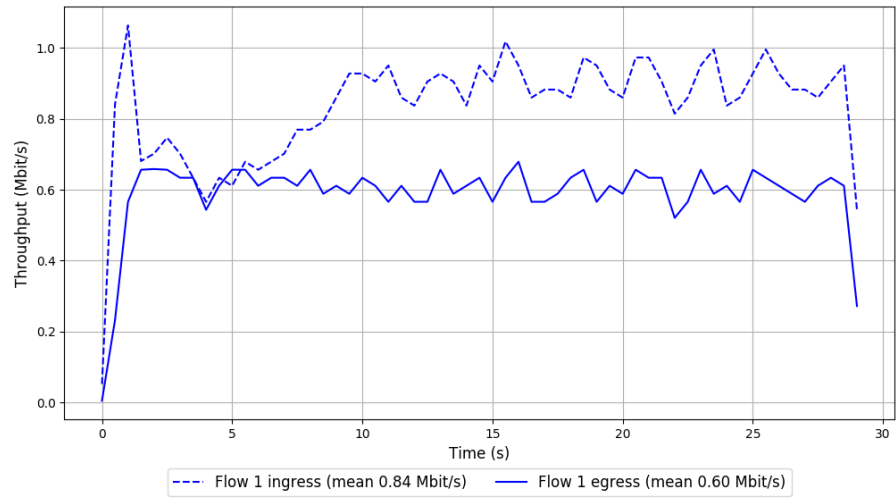
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7228.854 ms

Loss rate: 29.29%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2017-09-22 10:02:06

End at: 2017-09-22 10:02:36

Local clock offset: 0.019 ms

Remote clock offset: -3.107 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7289.909 ms

Loss rate: 29.44%

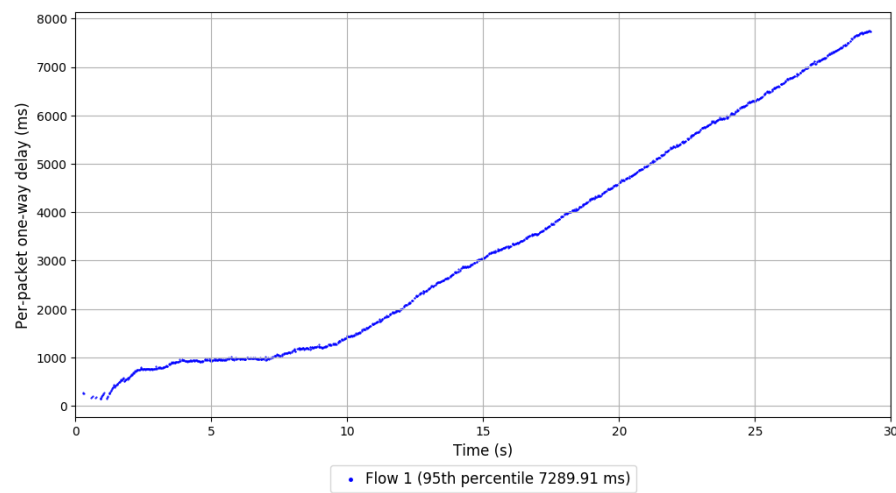
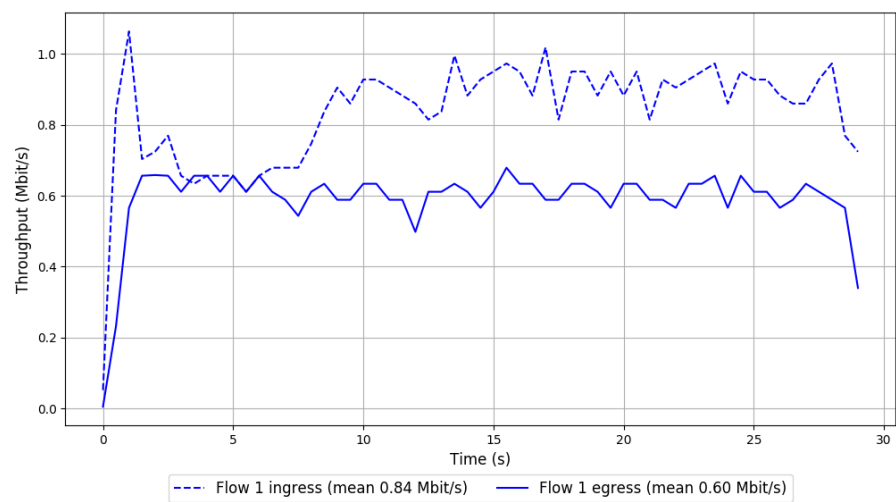
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7289.909 ms

Loss rate: 29.44%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2017-09-22 10:18:28

End at: 2017-09-22 10:18:58

Local clock offset: 0.046 ms

Remote clock offset: -2.723 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7199.378 ms

Loss rate: 29.05%

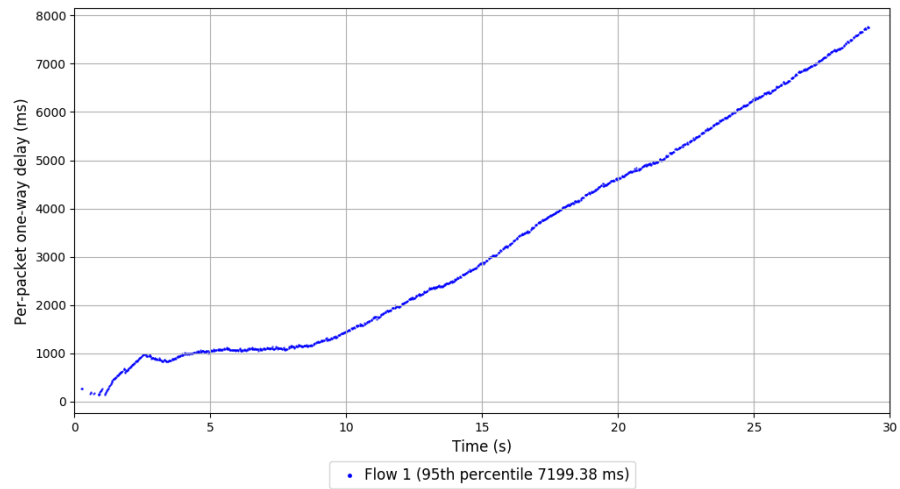
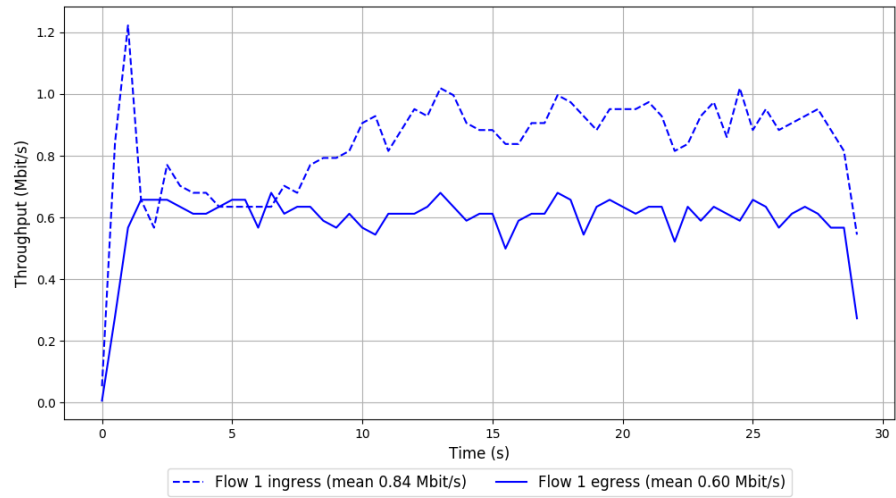
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7199.378 ms

Loss rate: 29.05%

Run 3: Report of QUIC Cubic — Data Link

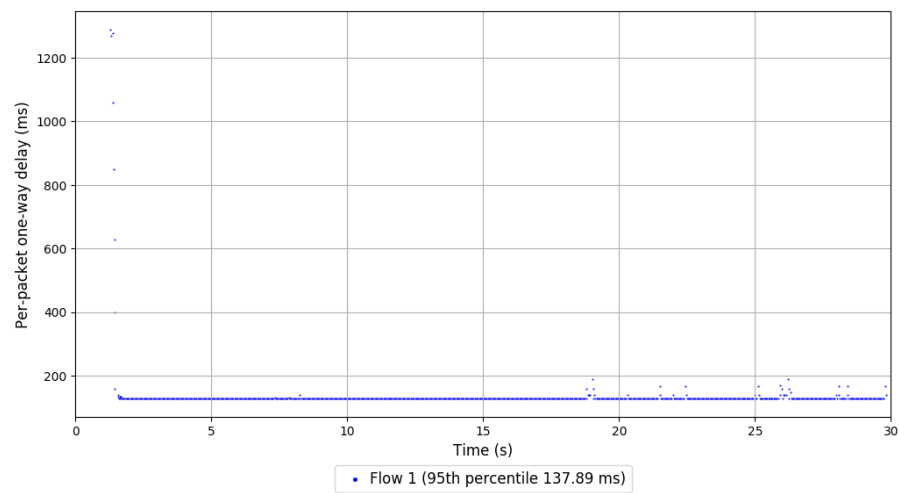
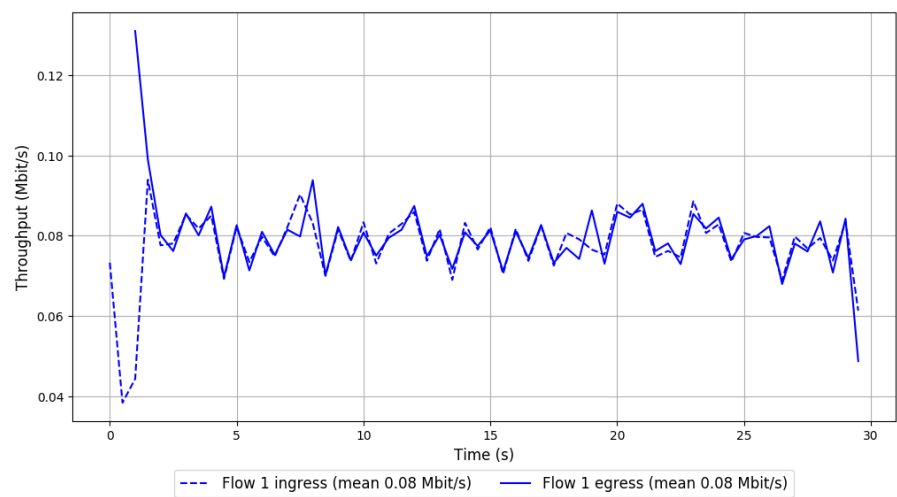


Run 1: Statistics of SCReAM

Start at: 2017-09-22 09:57:25
End at: 2017-09-22 09:57:55
Local clock offset: 0.111 ms
Remote clock offset: -3.109 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 137.891 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 137.891 ms
Loss rate: 0.66%

Run 1: Report of SReAM — Data Link

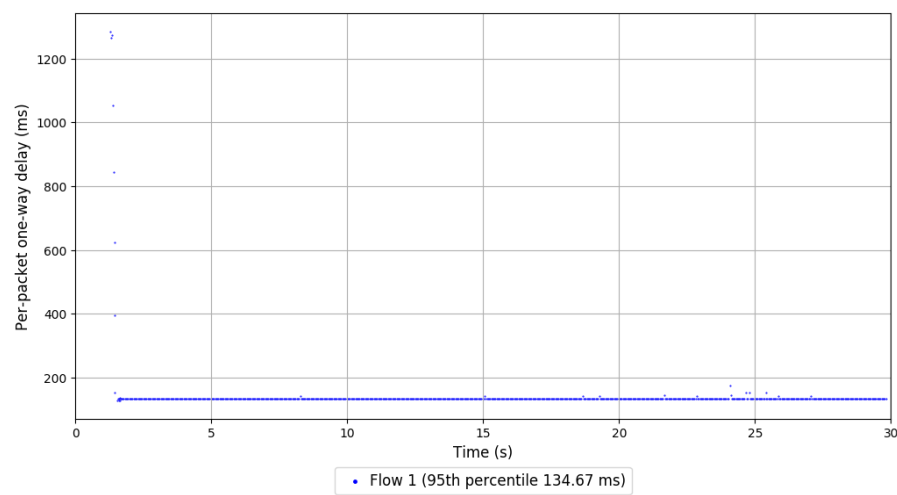
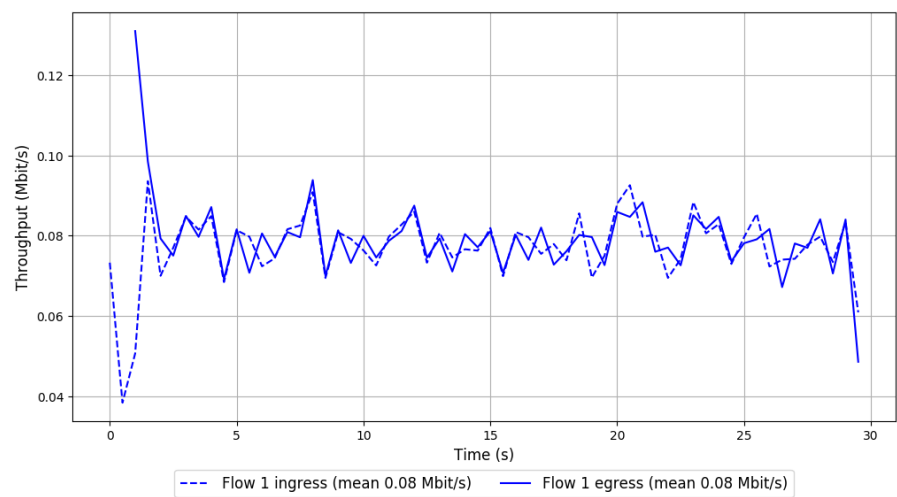


Run 2: Statistics of SCReAM

Start at: 2017-09-22 10:13:48
End at: 2017-09-22 10:14:18
Local clock offset: 0.062 ms
Remote clock offset: -7.878 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 134.668 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 134.668 ms
Loss rate: 0.66%

Run 2: Report of SReAM — Data Link

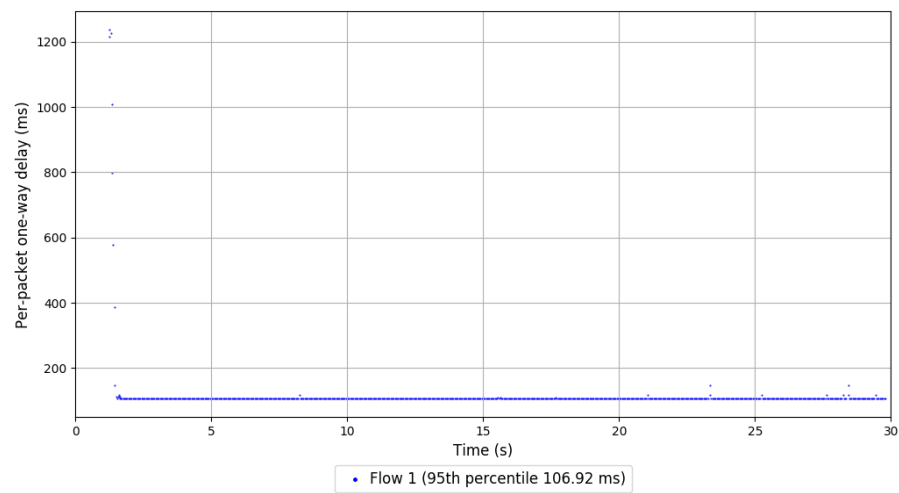
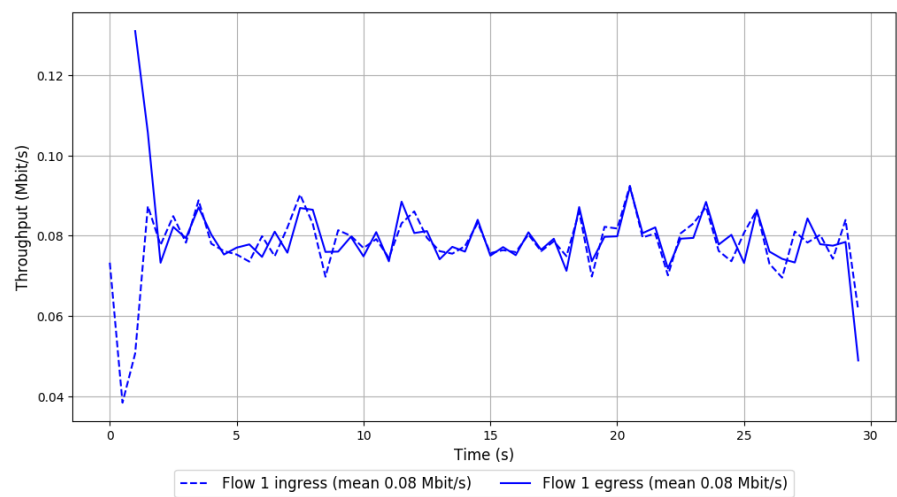


Run 3: Statistics of SCReAM

Start at: 2017-09-22 10:30:11
End at: 2017-09-22 10:30:41
Local clock offset: 0.072 ms
Remote clock offset: 14.006 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 106.923 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 106.923 ms
Loss rate: 0.66%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

Start at: 2017-09-22 09:44:32

End at: 2017-09-22 09:45:02

Local clock offset: 0.1 ms

Remote clock offset: -8.05 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 660.715 ms

Loss rate: 1.05%

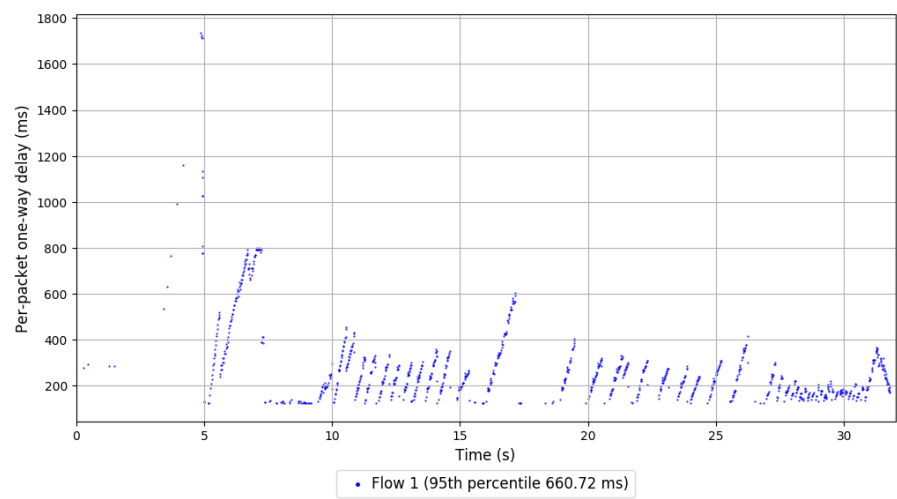
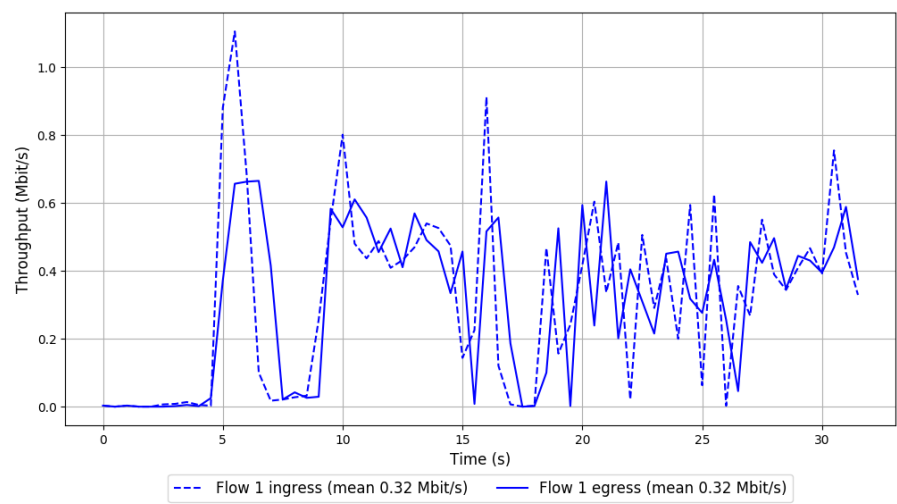
-- Flow 1:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 660.715 ms

Loss rate: 1.05%

Run 1: Report of WebRTC media — Data Link

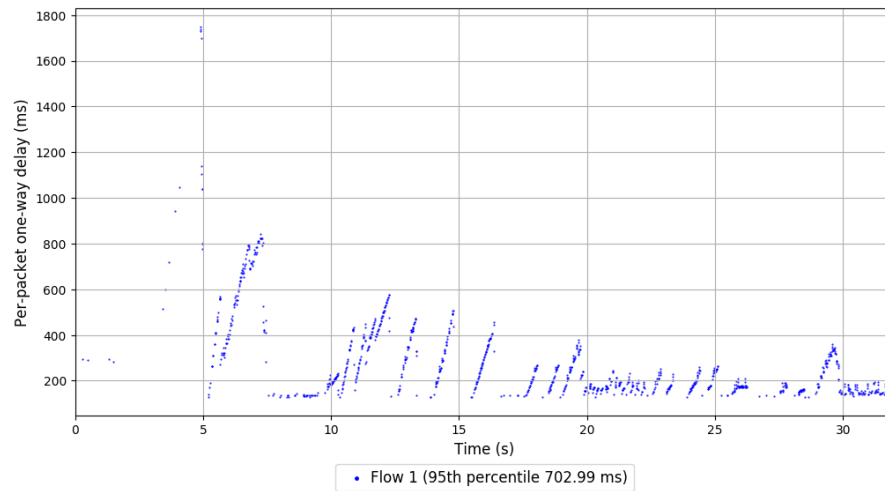
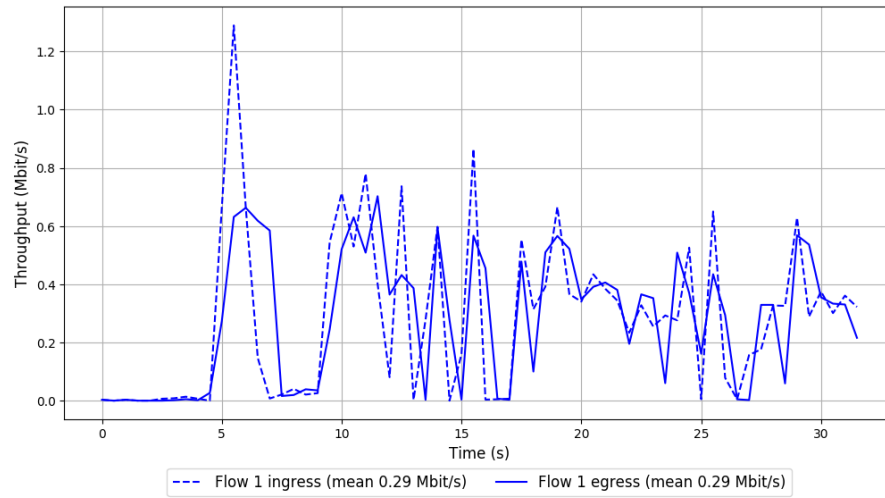


Run 2: Statistics of WebRTC media

Start at: 2017-09-22 10:00:56
End at: 2017-09-22 10:01:26
Local clock offset: 0.087 ms
Remote clock offset: -7.923 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 702.987 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 702.987 ms
Loss rate: 1.11%

Run 2: Report of WebRTC media — Data Link

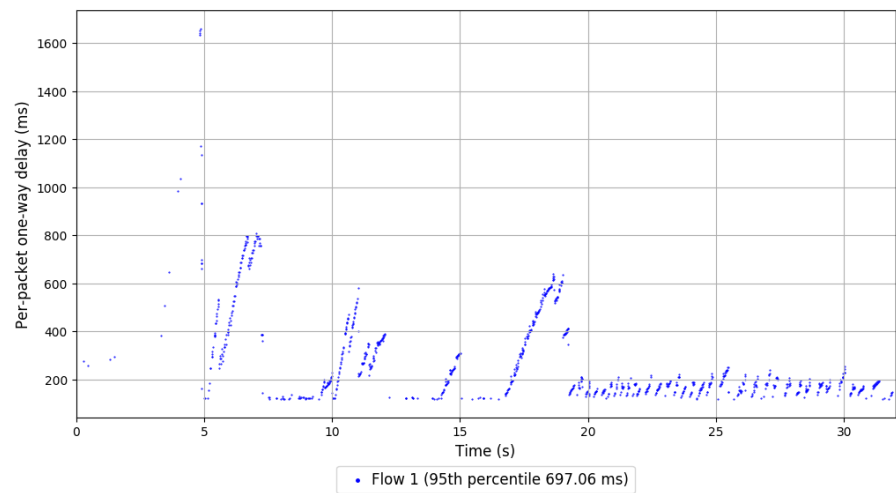
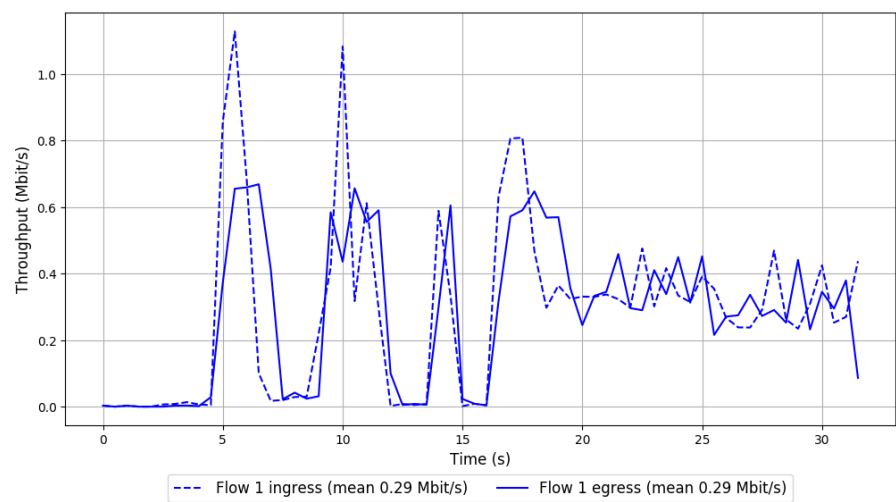


Run 3: Statistics of WebRTC media

Start at: 2017-09-22 10:17:18
End at: 2017-09-22 10:17:48
Local clock offset: 0.1 ms
Remote clock offset: -2.718 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 697.062 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 697.062 ms
Loss rate: 1.93%

Run 3: Report of WebRTC media — Data Link

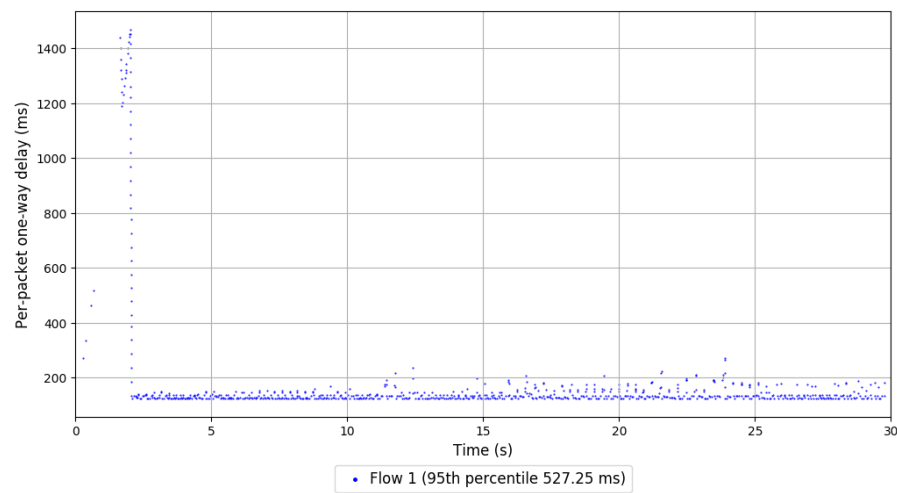
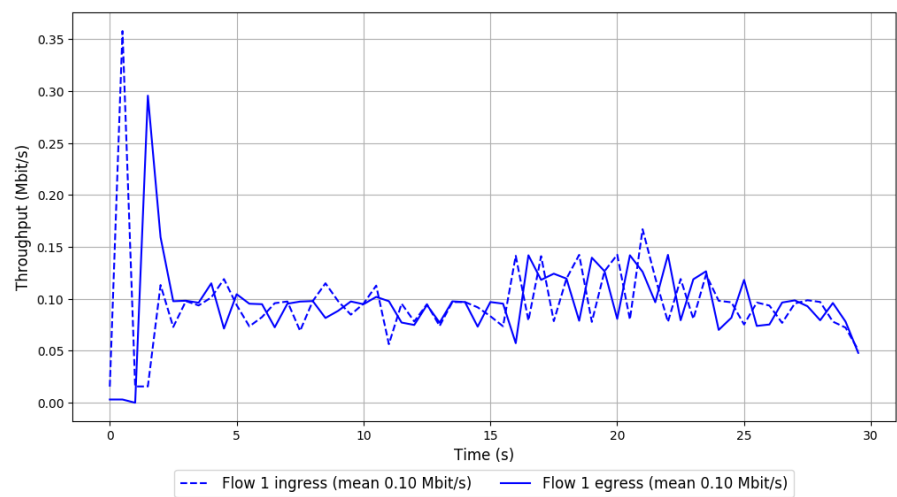


Run 1: Statistics of Sprout

Start at: 2017-09-22 09:56:15
End at: 2017-09-22 09:56:45
Local clock offset: 0.113 ms
Remote clock offset: -8.079 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 527.246 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 527.246 ms
Loss rate: 0.62%

Run 1: Report of Sprout — Data Link

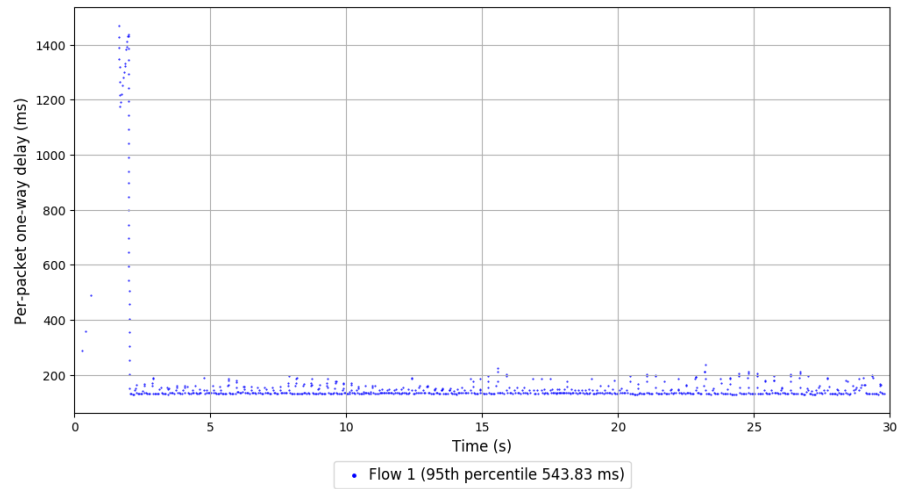
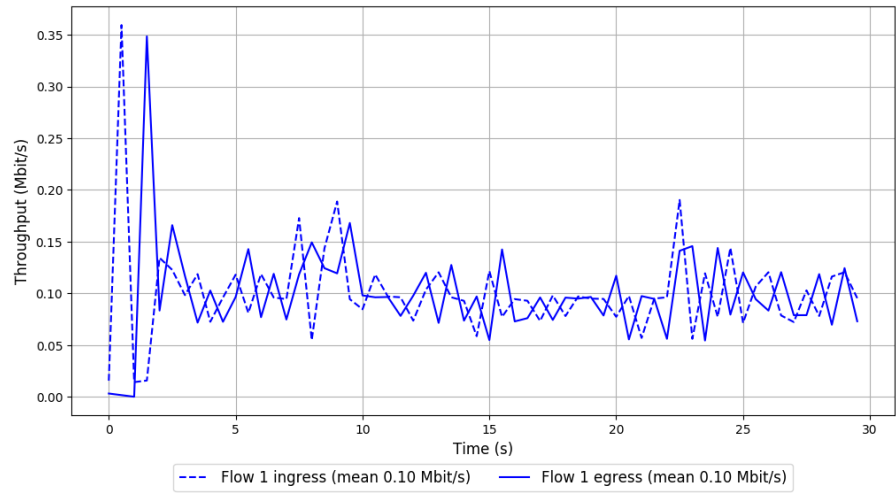


Run 2: Statistics of Sprout

Start at: 2017-09-22 10:12:37
End at: 2017-09-22 10:13:08
Local clock offset: 0.067 ms
Remote clock offset: -7.786 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 543.828 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 543.828 ms
Loss rate: 1.72%

Run 2: Report of Sprout — Data Link

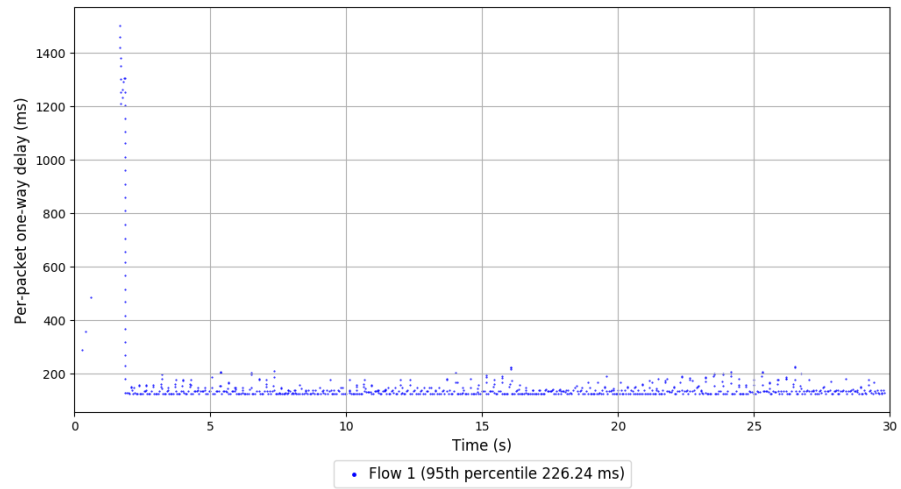
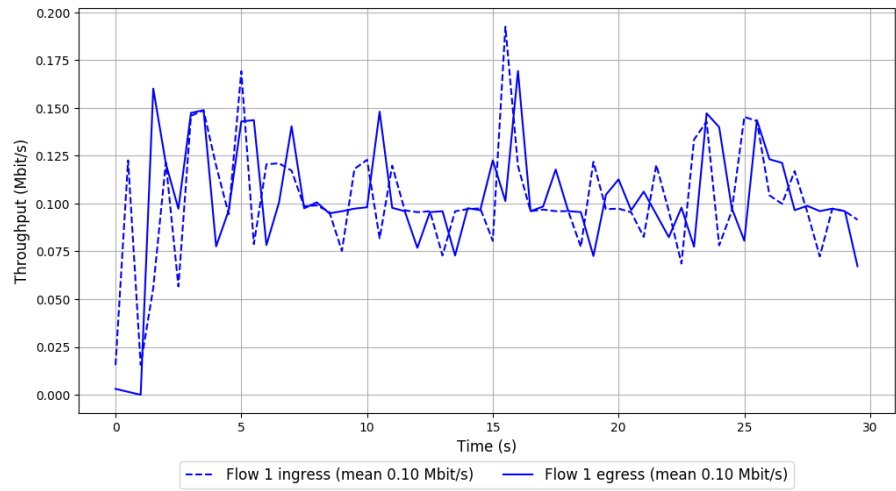


Run 3: Statistics of Sprout

Start at: 2017-09-22 10:29:01
End at: 2017-09-22 10:29:31
Local clock offset: 0.086 ms
Remote clock offset: -7.504 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 226.235 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 226.235 ms
Loss rate: 0.74%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2017-09-22 09:52:44

End at: 2017-09-22 09:53:14

Local clock offset: 0.102 ms

Remote clock offset: -7.943 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 921.616 ms

Loss rate: 2.87%

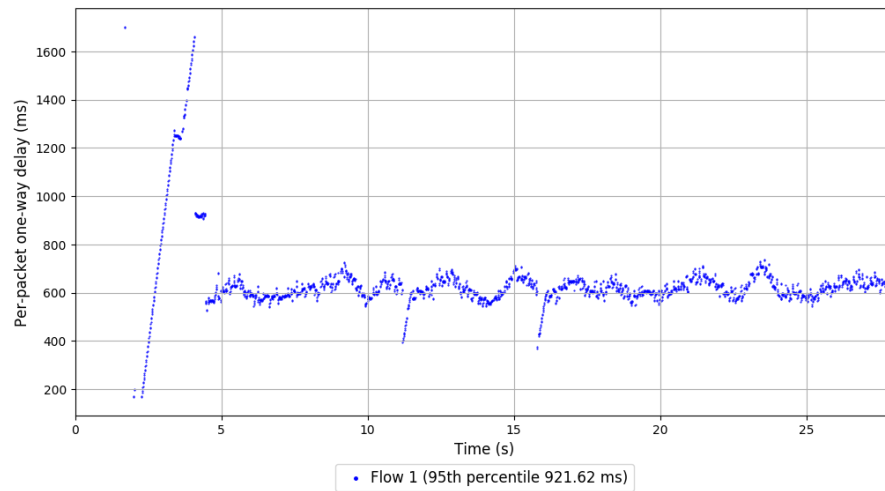
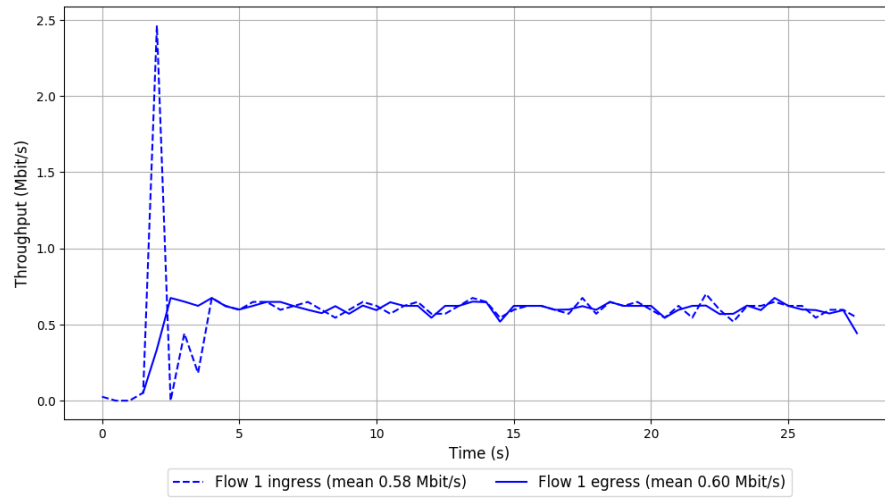
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 921.616 ms

Loss rate: 2.87%

Run 1: Report of TaoVA-100x — Data Link



Run 2: Statistics of TaoVA-100x

Start at: 2017-09-22 10:09:07

End at: 2017-09-22 10:09:37

Local clock offset: 0.104 ms

Remote clock offset: -2.934 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 901.384 ms

Loss rate: 2.65%

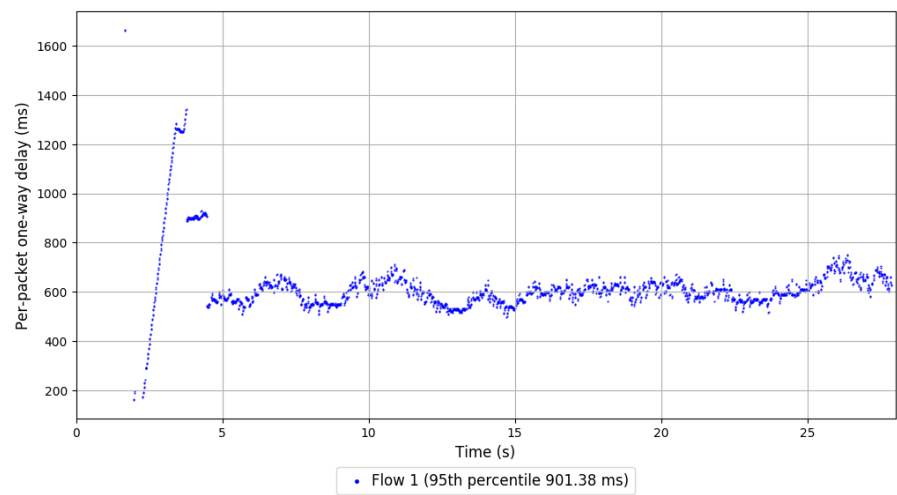
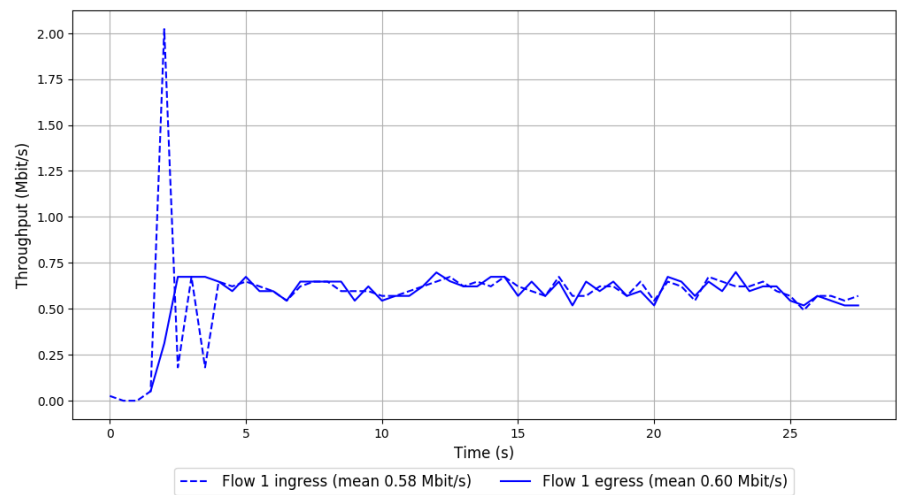
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 901.384 ms

Loss rate: 2.65%

Run 2: Report of TaoVA-100x — Data Link

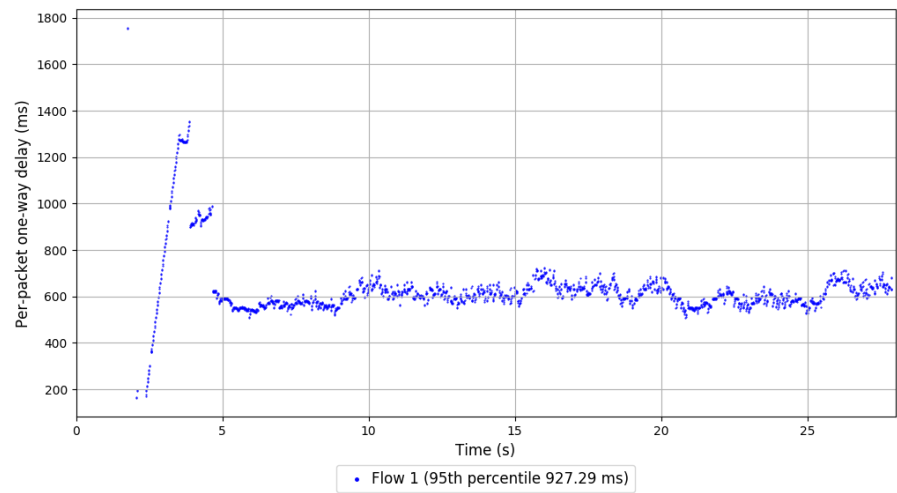
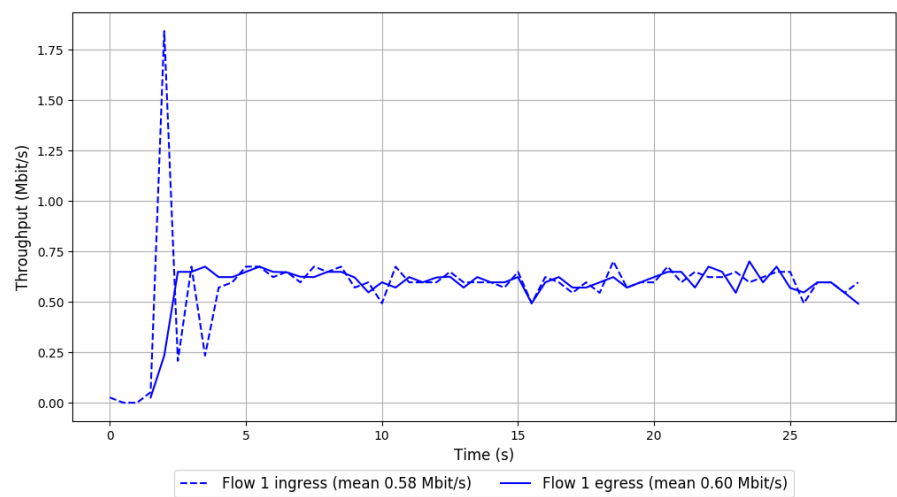


Run 3: Statistics of TaoVA-100x

Start at: 2017-09-22 10:25:30
End at: 2017-09-22 10:26:00
Local clock offset: 0.038 ms
Remote clock offset: -7.769 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 927.287 ms
Loss rate: 2.66%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 927.287 ms
Loss rate: 2.66%

Run 3: Report of TaoVA-100x — Data Link



Run 1: Statistics of TCP Vegas

Start at: 2017-09-22 09:42:12

End at: 2017-09-22 09:42:42

Local clock offset: 0.166 ms

Remote clock offset: -3.059 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 922.524 ms

Loss rate: 0.90%

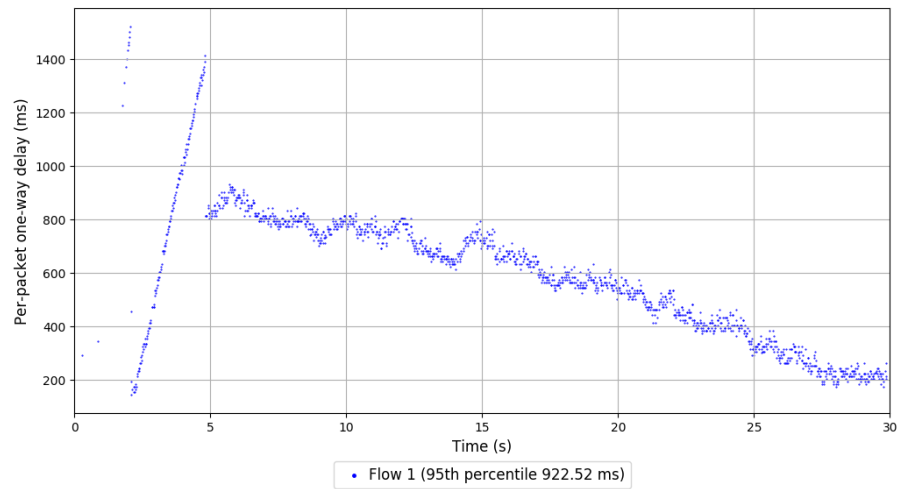
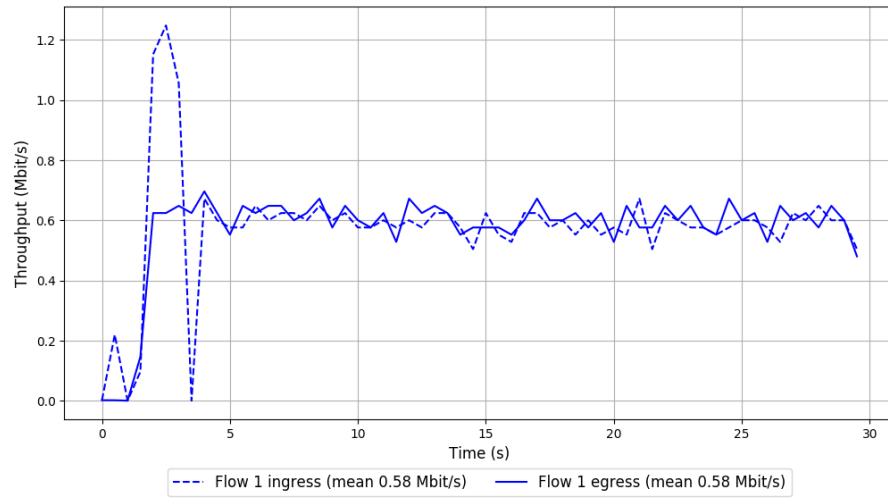
-- Flow 1:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 922.524 ms

Loss rate: 0.90%

Run 1: Report of TCP Vegas — Data Link

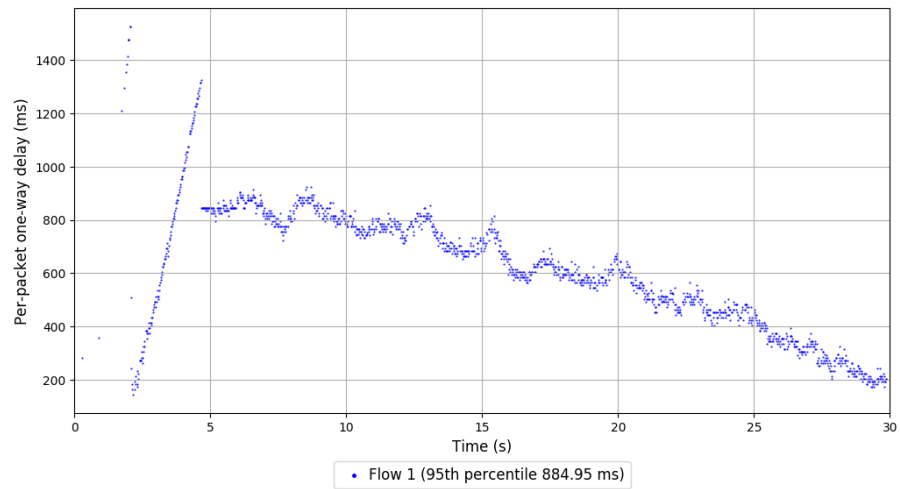
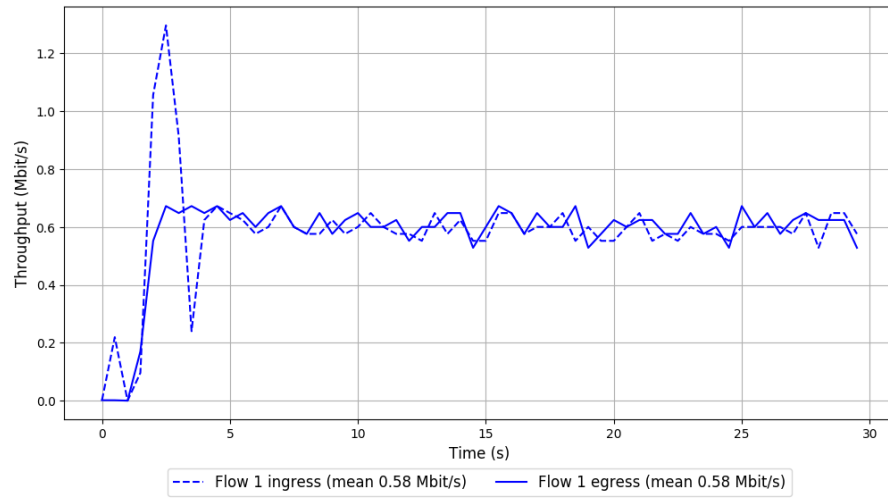


Run 2: Statistics of TCP Vegas

Start at: 2017-09-22 09:58:35
End at: 2017-09-22 09:59:05
Local clock offset: 0.013 ms
Remote clock offset: -8.004 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 884.950 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 884.950 ms
Loss rate: 1.03%

Run 2: Report of TCP Vegas — Data Link

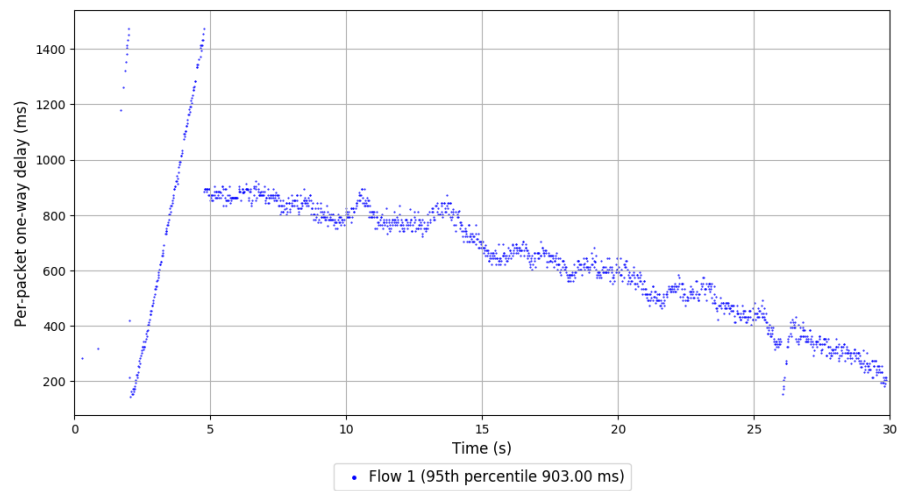
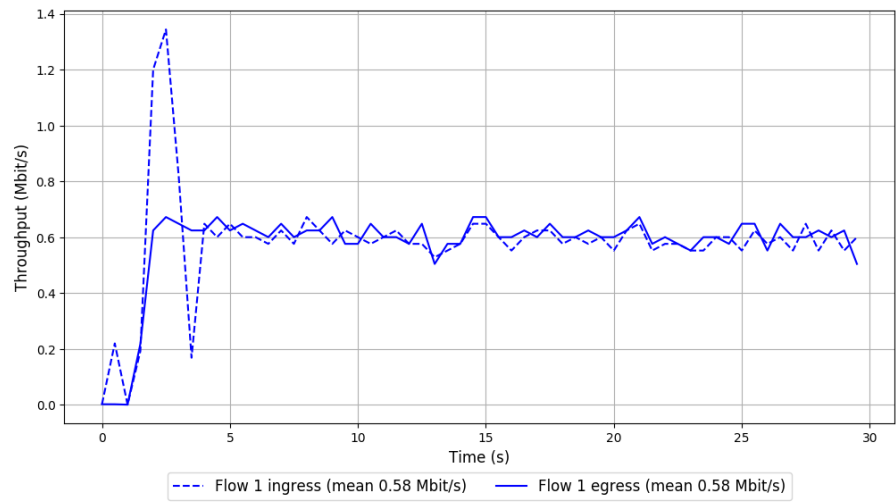


Run 3: Statistics of TCP Vegas

Start at: 2017-09-22 10:14:58
End at: 2017-09-22 10:15:28
Local clock offset: 0.032 ms
Remote clock offset: -7.858 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 902.997 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 902.997 ms
Loss rate: 1.10%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2017-09-22 09:48:04

End at: 2017-09-22 09:48:34

Local clock offset: 0.152 ms

Remote clock offset: -3.005 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 1991.467 ms

Loss rate: 3.81%

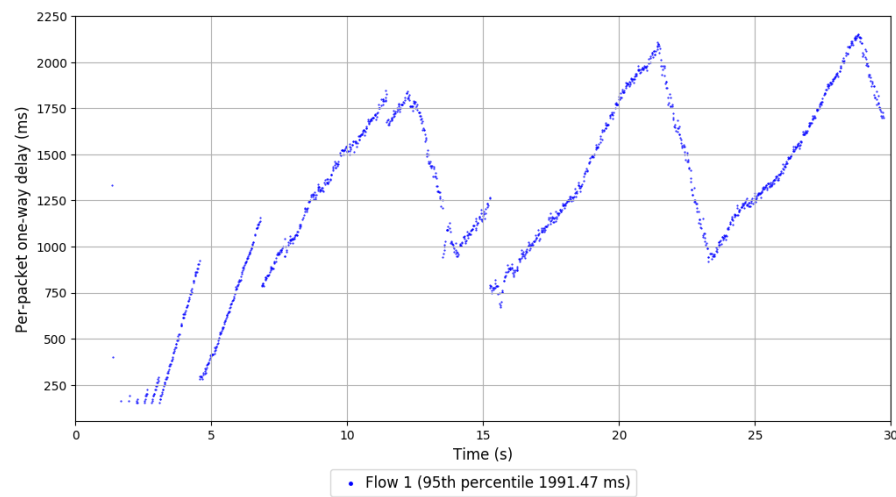
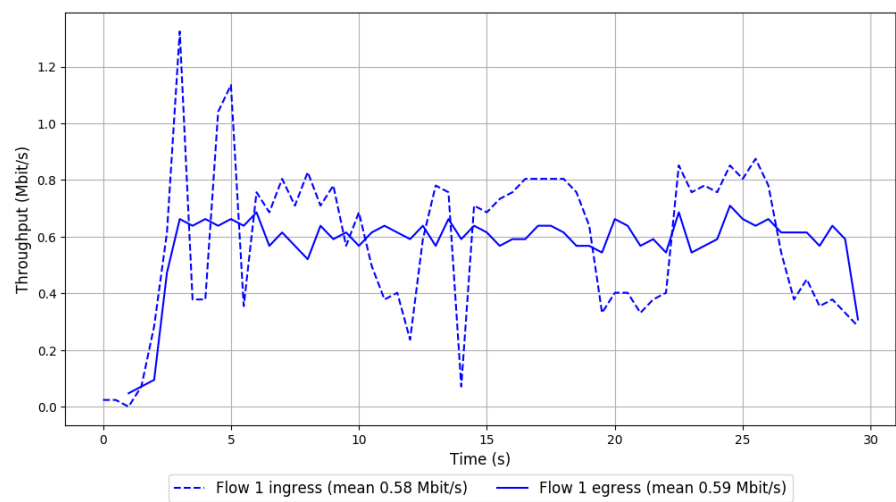
-- Flow 1:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 1991.467 ms

Loss rate: 3.81%

Run 1: Report of Verus — Data Link

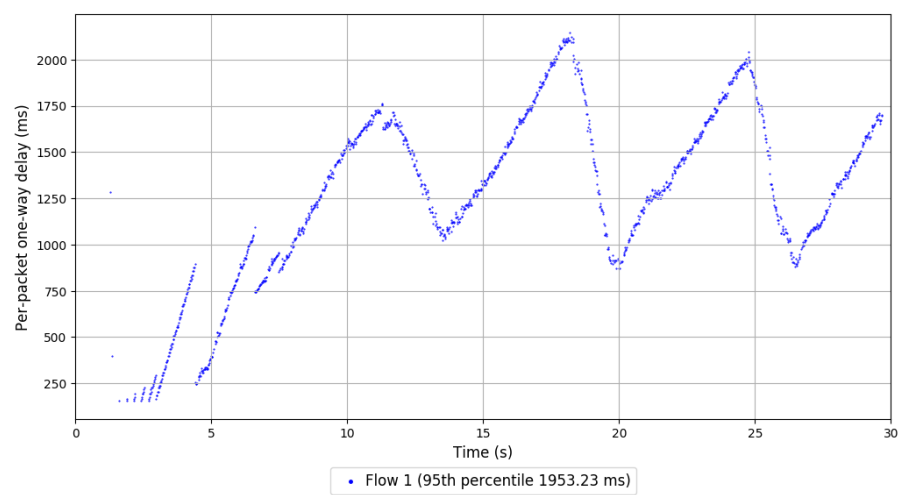
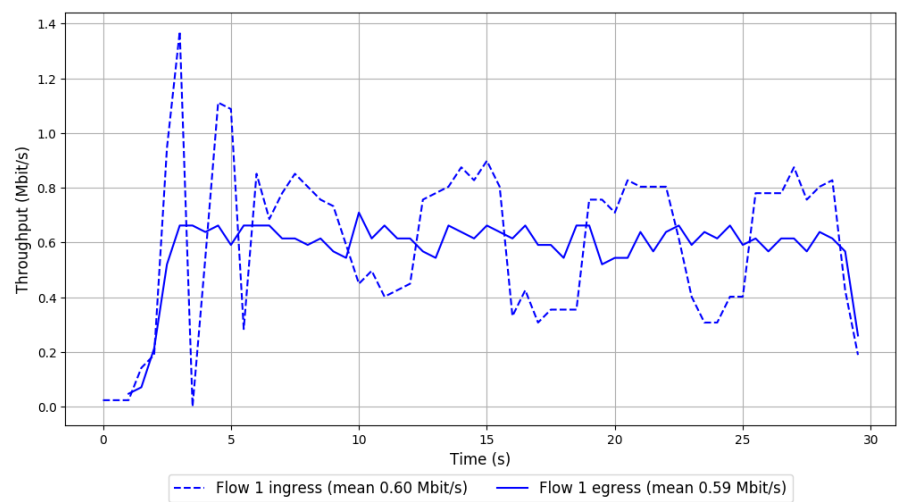


Run 2: Statistics of Verus

Start at: 2017-09-22 10:04:27
End at: 2017-09-22 10:04:57
Local clock offset: 0.074 ms
Remote clock offset: -7.937 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1953.226 ms
Loss rate: 6.30%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1953.226 ms
Loss rate: 6.30%

Run 2: Report of Verus — Data Link

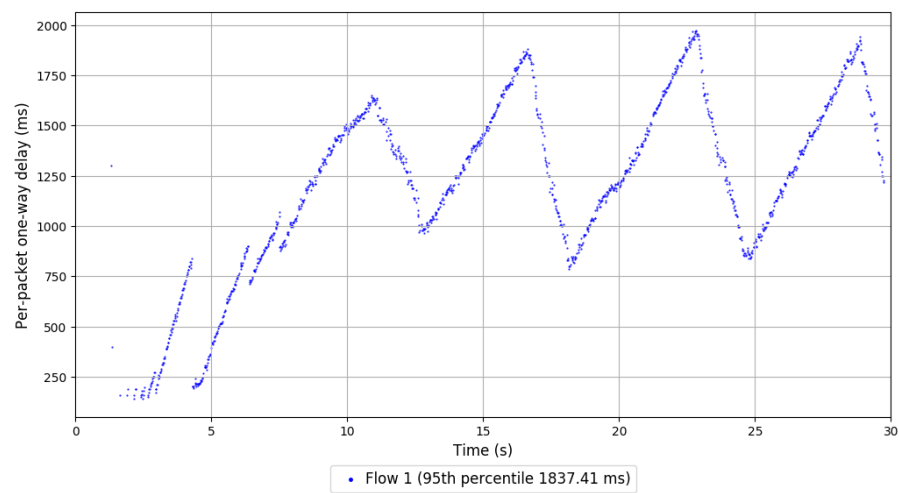
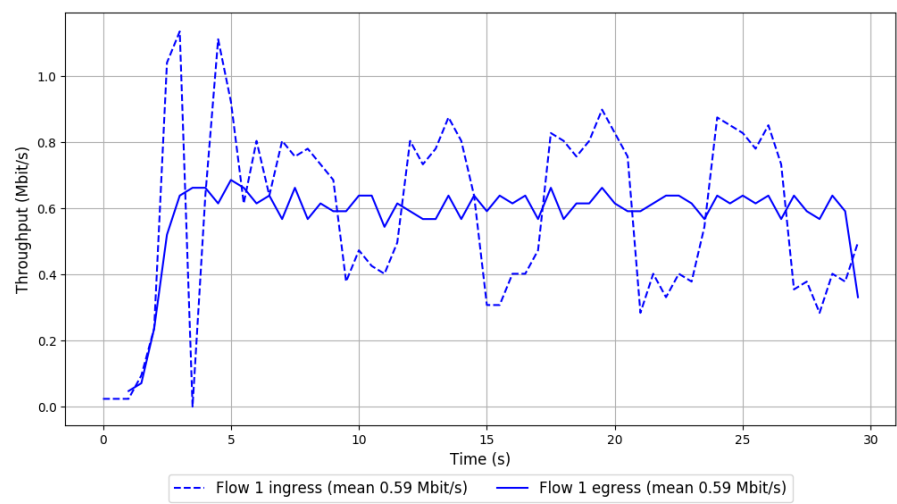


Run 3: Statistics of Verus

Start at: 2017-09-22 10:20:50
End at: 2017-09-22 10:21:20
Local clock offset: 0.053 ms
Remote clock offset: -2.976 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1837.406 ms
Loss rate: 3.51%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1837.406 ms
Loss rate: 3.51%

Run 3: Report of Verus — Data Link



Run 1: Statistics of Indigo

Start at: 2017-09-22 09:49:14

End at: 2017-09-22 09:49:44

Local clock offset: 0.182 ms

Remote clock offset: -7.946 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 1536.433 ms

Loss rate: 15.80%

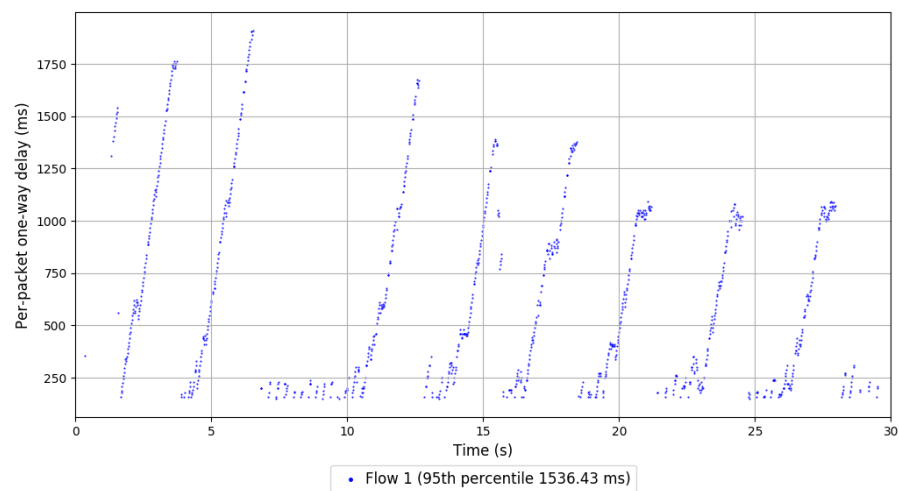
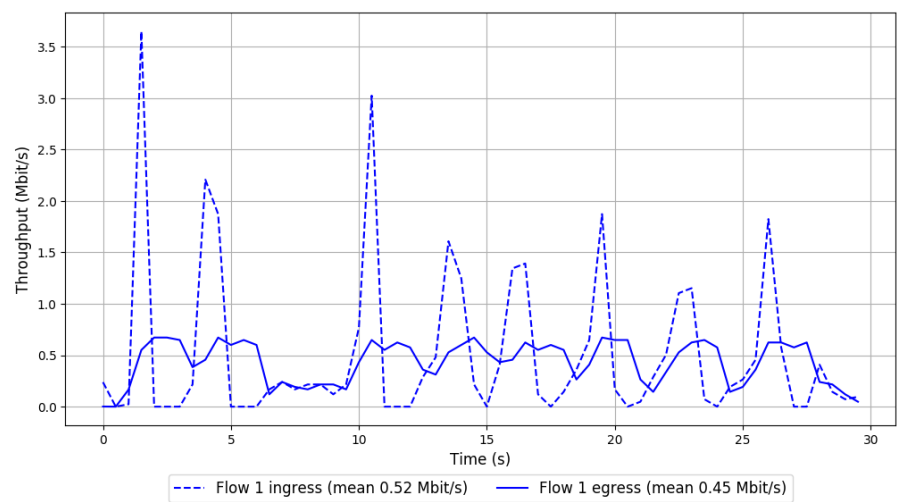
-- Flow 1:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 1536.433 ms

Loss rate: 15.80%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2017-09-22 10:05:37

End at: 2017-09-22 10:06:07

Local clock offset: 0.1 ms

Remote clock offset: -7.926 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 1566.918 ms

Loss rate: 18.01%

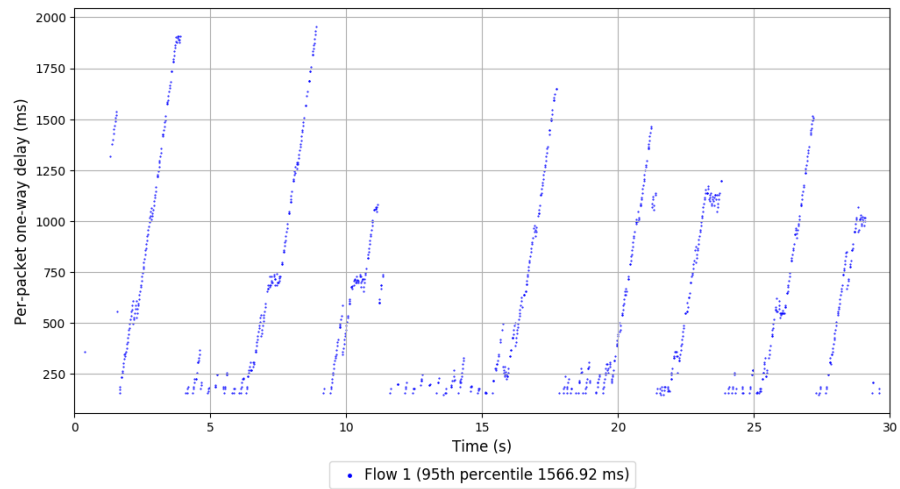
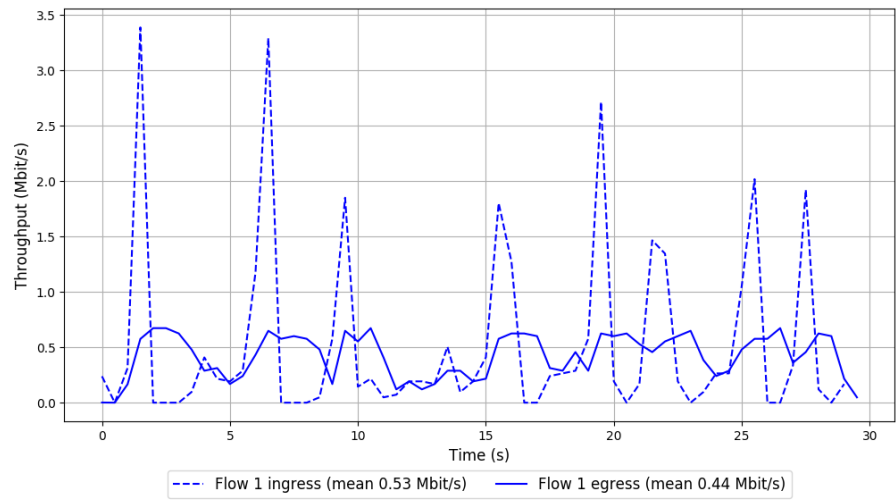
-- Flow 1:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 1566.918 ms

Loss rate: 18.01%

Run 2: Report of Indigo — Data Link

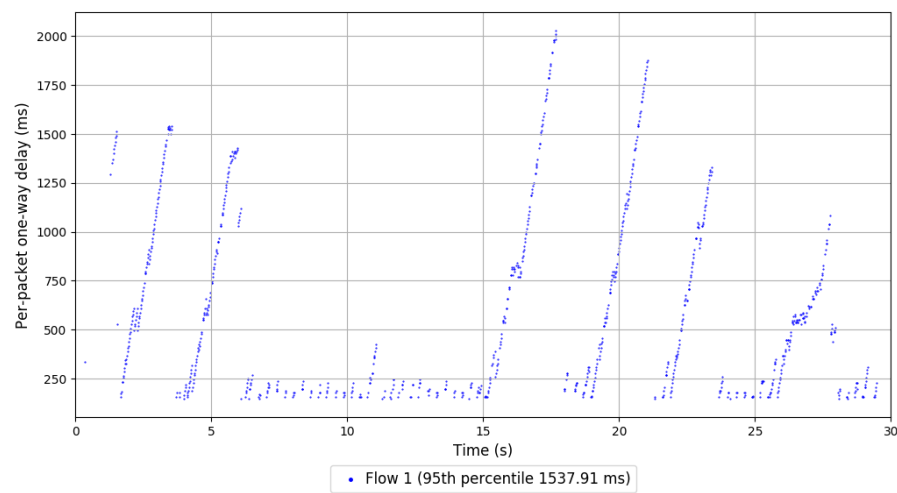
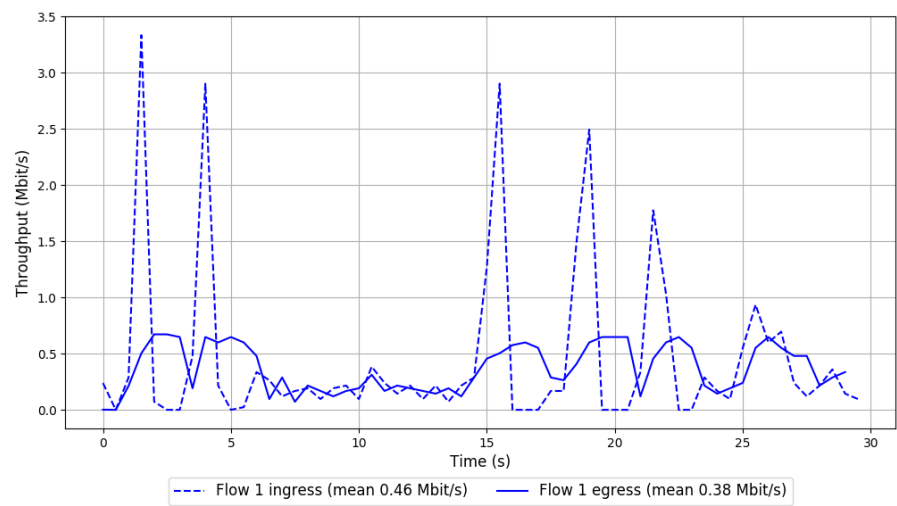


Run 3: Statistics of Indigo

Start at: 2017-09-22 10:22:00
End at: 2017-09-22 10:22:30
Local clock offset: -0.005 ms
Remote clock offset: -7.892 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1537.908 ms
Loss rate: 19.63%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1537.908 ms
Loss rate: 19.63%

Run 3: Report of Indigo — Data Link



Run 1: Statistics of Indigo-cellular

Start at: 2017-09-22 09:55:05

End at: 2017-09-22 09:55:35

Local clock offset: 0.121 ms

Remote clock offset: -8.017 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 391.104 ms

Loss rate: 1.20%

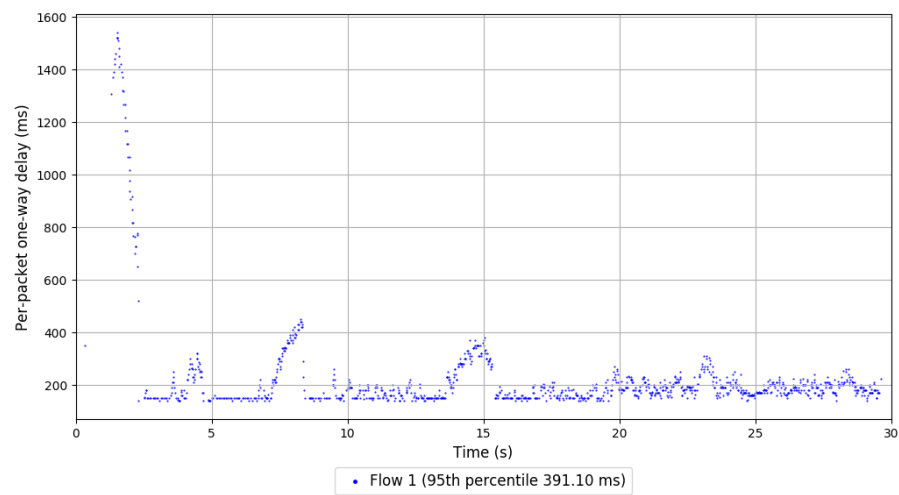
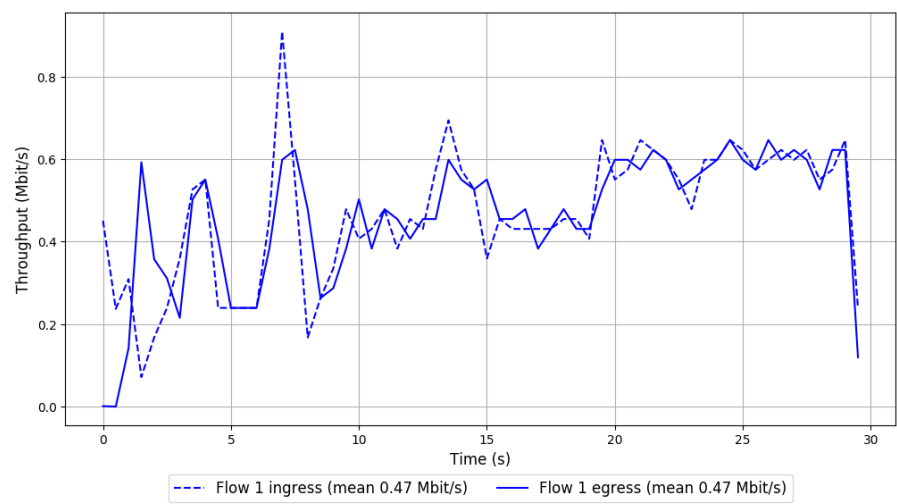
-- Flow 1:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 391.104 ms

Loss rate: 1.20%

Run 1: Report of Indigo-cellular — Data Link



Run 2: Statistics of Indigo-cellular

Start at: 2017-09-22 10:11:28

End at: 2017-09-22 10:11:58

Local clock offset: 0.009 ms

Remote clock offset: -7.817 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.49 Mbit/s

95th percentile per-packet one-way delay: 374.409 ms

Loss rate: 1.08%

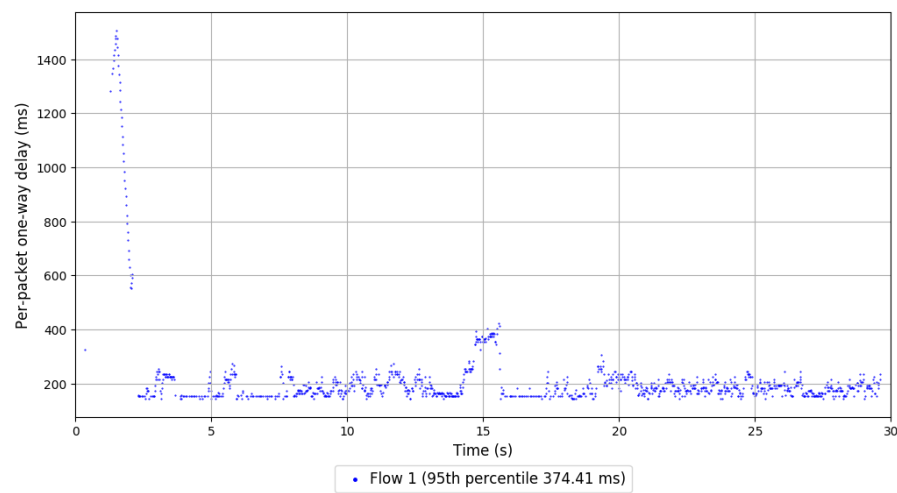
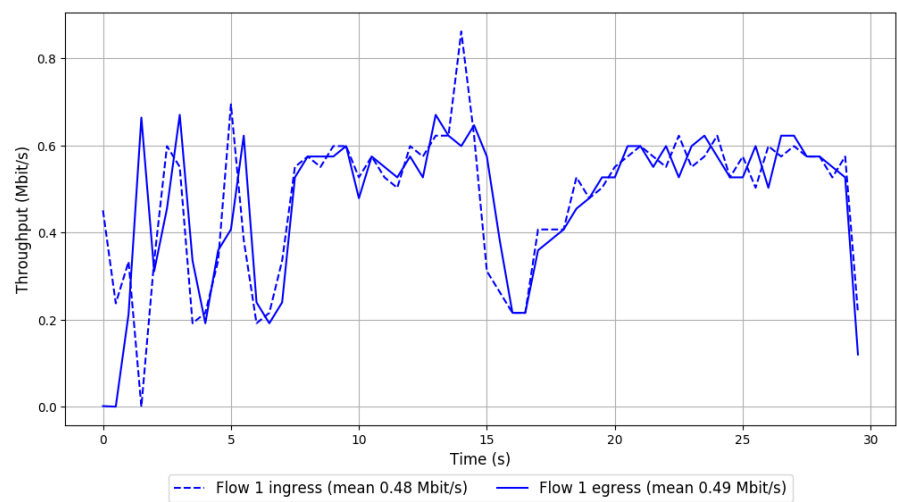
-- Flow 1:

Average throughput: 0.49 Mbit/s

95th percentile per-packet one-way delay: 374.409 ms

Loss rate: 1.08%

Run 2: Report of Indigo-cellular — Data Link

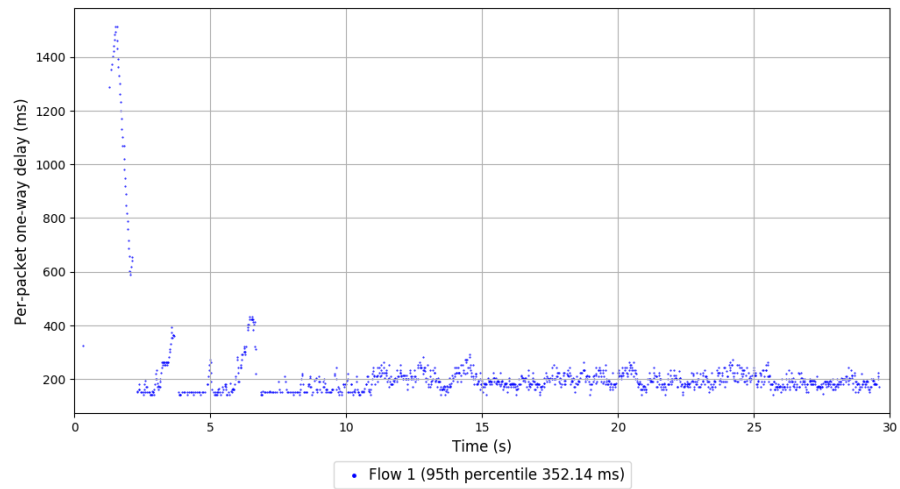
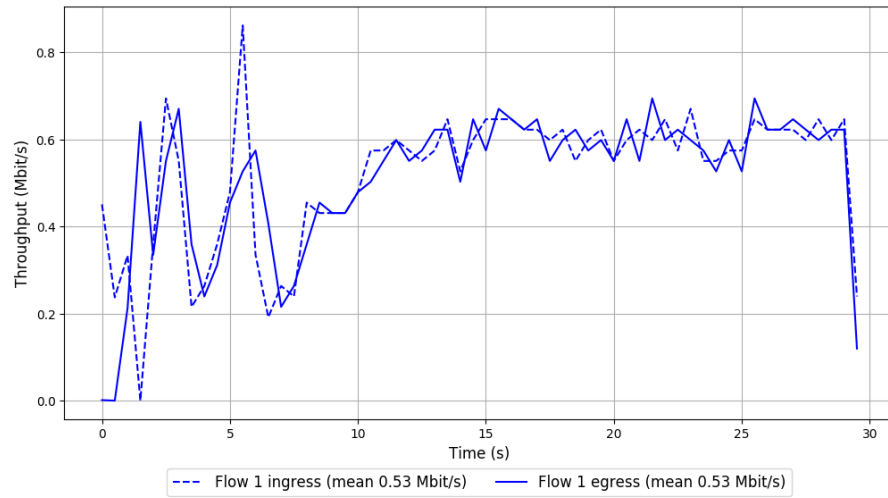


Run 3: Statistics of Indigo-cellular

Start at: 2017-09-22 10:27:51
End at: 2017-09-22 10:28:21
Local clock offset: 0.056 ms
Remote clock offset: -6.275 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 352.140 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 352.140 ms
Loss rate: 1.15%

Run 3: Report of Indigo-cellular — Data Link



Run 1: Statistics of KohoCC

Start at: 2017-09-22 09:51:34

End at: 2017-09-22 09:52:04

Local clock offset: 0.163 ms

Remote clock offset: -2.966 ms

Below is generated by plot.py at 2017-09-22 11:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 401.431 ms

Loss rate: 1.27%

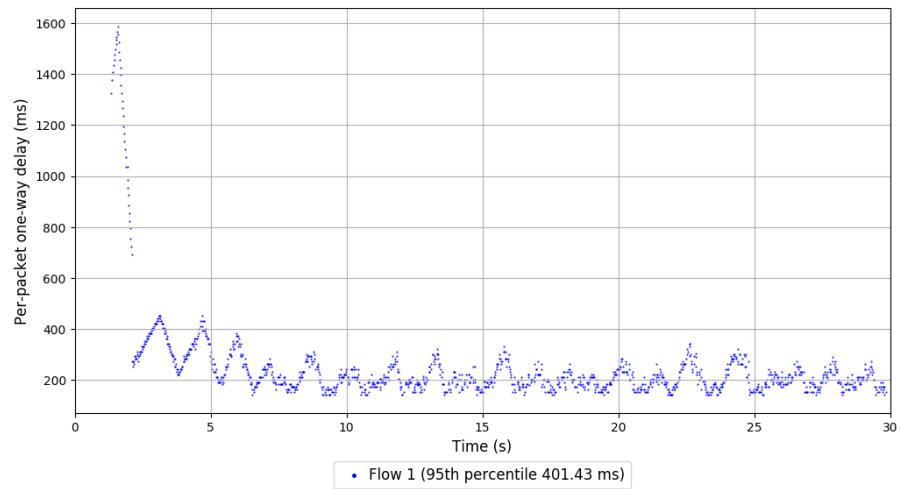
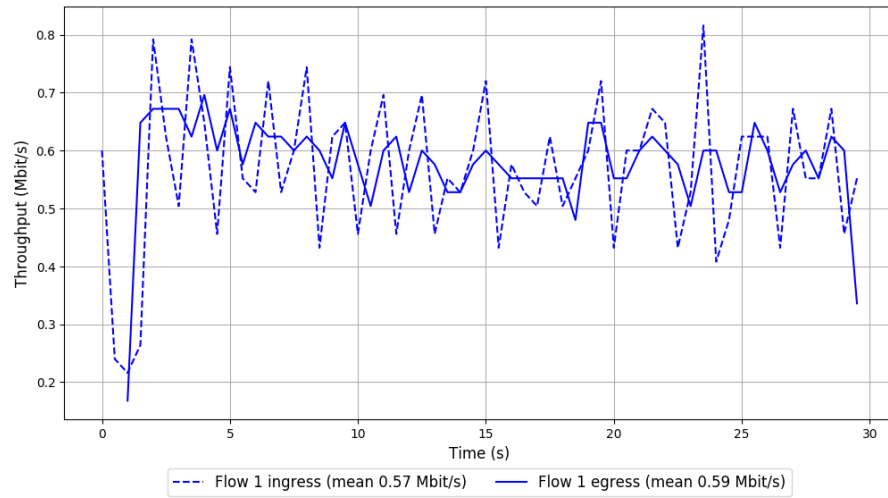
-- Flow 1:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 401.431 ms

Loss rate: 1.27%

Run 1: Report of KohoCC — Data Link

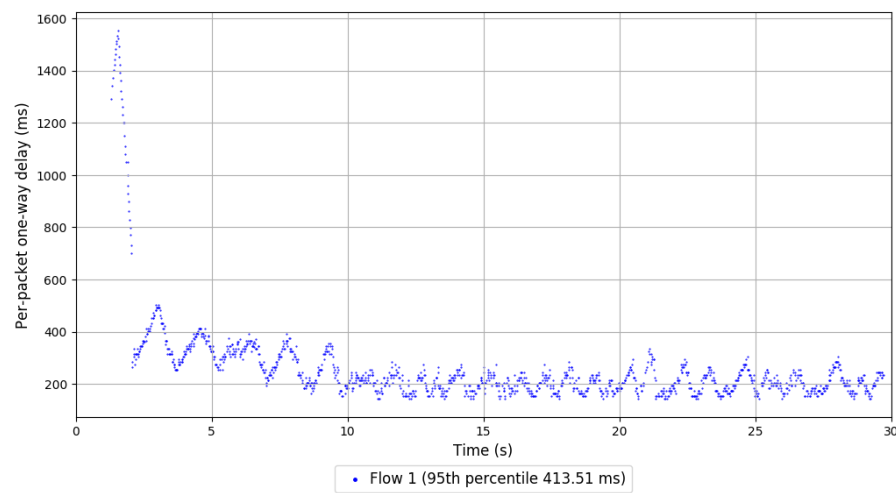
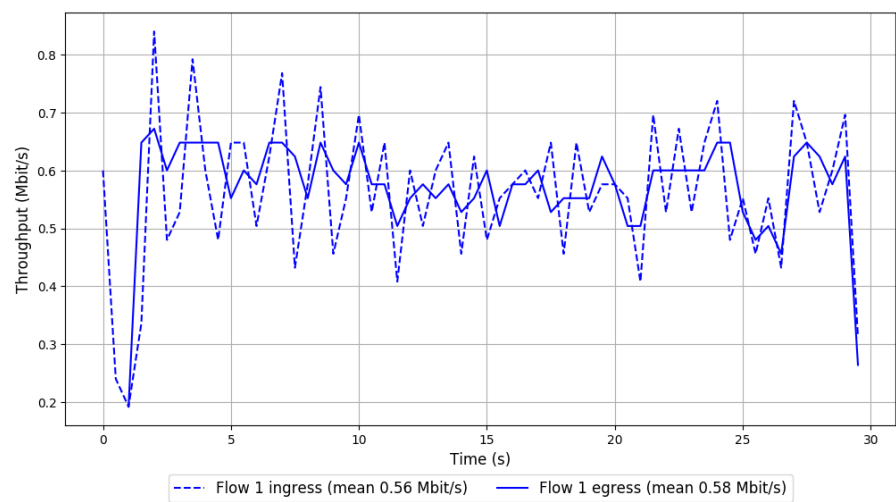


Run 2: Statistics of KohoCC

Start at: 2017-09-22 10:07:57
End at: 2017-09-22 10:08:27
Local clock offset: 0.101 ms
Remote clock offset: -7.934 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 413.512 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 413.512 ms
Loss rate: 1.28%

Run 2: Report of KohoCC — Data Link



Run 3: Statistics of KohoCC

Start at: 2017-09-22 10:24:20
End at: 2017-09-22 10:24:50
Local clock offset: -0.005 ms
Remote clock offset: -2.984 ms

Below is generated by plot.py at 2017-09-22 11:20:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 397.029 ms
Loss rate: 1.61%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 397.029 ms
Loss rate: 1.61%

Run 3: Report of KohoCC — Data Link

